

Boone Management Unit Boone Reservoir

Resource Management Plan and Environmental Assessment

Tennessee Valley Authority 2002



**RESOURCE MANAGEMENT PLAN
AND
FINAL ENVIRONMENTAL ASSESSMENT**

**BOONE MANAGEMENT UNIT
BOONE RESERVOIR
SULLIVAN AND WASHINGTON COUNTY, TENNESSEE**

TENNESSEE VALLEY AUTHORITY

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**This document was prepared by
The Tennessee Valley Authority
Norris, Tennessee 37828**

Resources Management Plan and Final Environmental Assessment

Responsible Federal Agency: Tennessee Valley Authority (TVA)

Proposed Action: The proposed action consists of two parts: (1) determining the scope and intensity of TVA's resource management activities and (2) implementing a management plan for the Boone Reservoir Resource Management Unit.

Three Alternatives for managing Boone Unit were evaluated and are described in Chapter 2. These include the Current Management Alternative (i.e., a "no action" alternative), the No Resource Management Alternative, and the Proposed Resource Management Program Alternative. Although the alternatives vary in approach and intensity of management activity, TVA would take necessary measures to comply with applicable laws and regulations under any of these alternatives.

Abstract: The environmental consequences of three resource management alternatives are analyzed. Adoption of Alternative A would result in no significant change in TVA's current management program for the Boone Unit. Under this alternative, TVA would continue its current program of limited management contingent on the availability of staff and budgetary resources. This would include an irregular program of trash collection and boundary maintenance, periodic assessment and treatment of public safety issues identified by TVA staff and public stakeholders. Additionally, TVA would respond to unforeseen or episodic events (storm or insect damaged forest, beaver induced flooding, etc.), affecting publicly owned resources. Over the 25-year plan implementation cycle, Alternative A would likely maintain existing levels of biological diversity at both the community and species levels of ecological organization.

Adoption of Alternative B would likely result in some locally detrimental effects to lands and resources within the Boone Unit. Under the no management alternative, TVA would cease virtually all resource management activities. Various discretionary management activities (e.g., trash and litter removal, maintenance of roads and informal recreation sites, forest and wildlife habitat management, licensing of agricultural lands, etc.) would be discontinued. Additionally, no proactive efforts would be applied to reduce the potential for land or resource abuse or misuse. Consequently, conflicts between various user groups, and between users and adjacent property owners, could increase. Activities required for compliance with federal, state, and local regulations would be continued.

Adoption of Alternative C would result in long-term improvements in the quality of available wildlife habitats, improved forest management, and improved public access to Boone Unit lands. Re-establishment and maintenance of property boundaries, and publication of rules governing public access and use, would

reduce the potential for conflicts between user groups, and between users and adjacent property owners. Wildlife habitat improvements would result from creation of permanent openings and from small scale timber harvests to improve forest diversity and health. Access, which is limited from the land, would be improved by road and trails construction as well as strategic placement of signs and parking areas. Efforts to prevent and remove trash and litter would be strengthened through a continuing relationship with the Boone Lake Users Association.

Based on the analysis presented in this document, Alternative C is preferred because it best meets the needs and expectations of TVA's resource management stakeholders. Likewise, this alternative would improve wildlife habitat, reduce the potential for abuse or misuse of public lands, and result in increased accessibility to unit based resources, thereby, resulting in improved public use opportunities.

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CHAPTER 1

PURPOSE OF AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) proposes to determine what level of resource management, if any, would be applied on Boone Management Unit. This Unit plan and environmental assessment (EA) describe resource management alternatives for TVA's 594-acre Boone Unit. If approved, the management program outlined in TVA's Preferred Alternative would guide resource management activities on Boone Unit for a period of 25 years or until this plan is amended or supplemented through subsequent planning.

The Boone Unit is located in Sullivan and Washington Counties, Tennessee, approximately 10 miles southeast of Kingsport, 9 miles north of Johnson City, and 16 miles southwest of Bristol. Boone Unit lands are located along both banks of the South Fork Holston River (Mile 18.6 to Mile 35), Watauga River (mouth to Mile 15.2), and left descending bank of Beaver Creek from the mouth to Mile 1.8 (see Figure 1).

In developing this management plan, TVA seeks:

- To provide sustainable amenities and benefits to the public through effective management of natural resources (particularly wildlife and forests).
- To protect sensitive resources in accordance with existing regulations, requirements, and principles of good stewardship.
- To protect and enhance watershed health¹ in the South Fork Holston (TN-06010102-110), Beaver Creek (TN-06010102-120), and Watauga River (TN-06010103-150) hydrologic units.

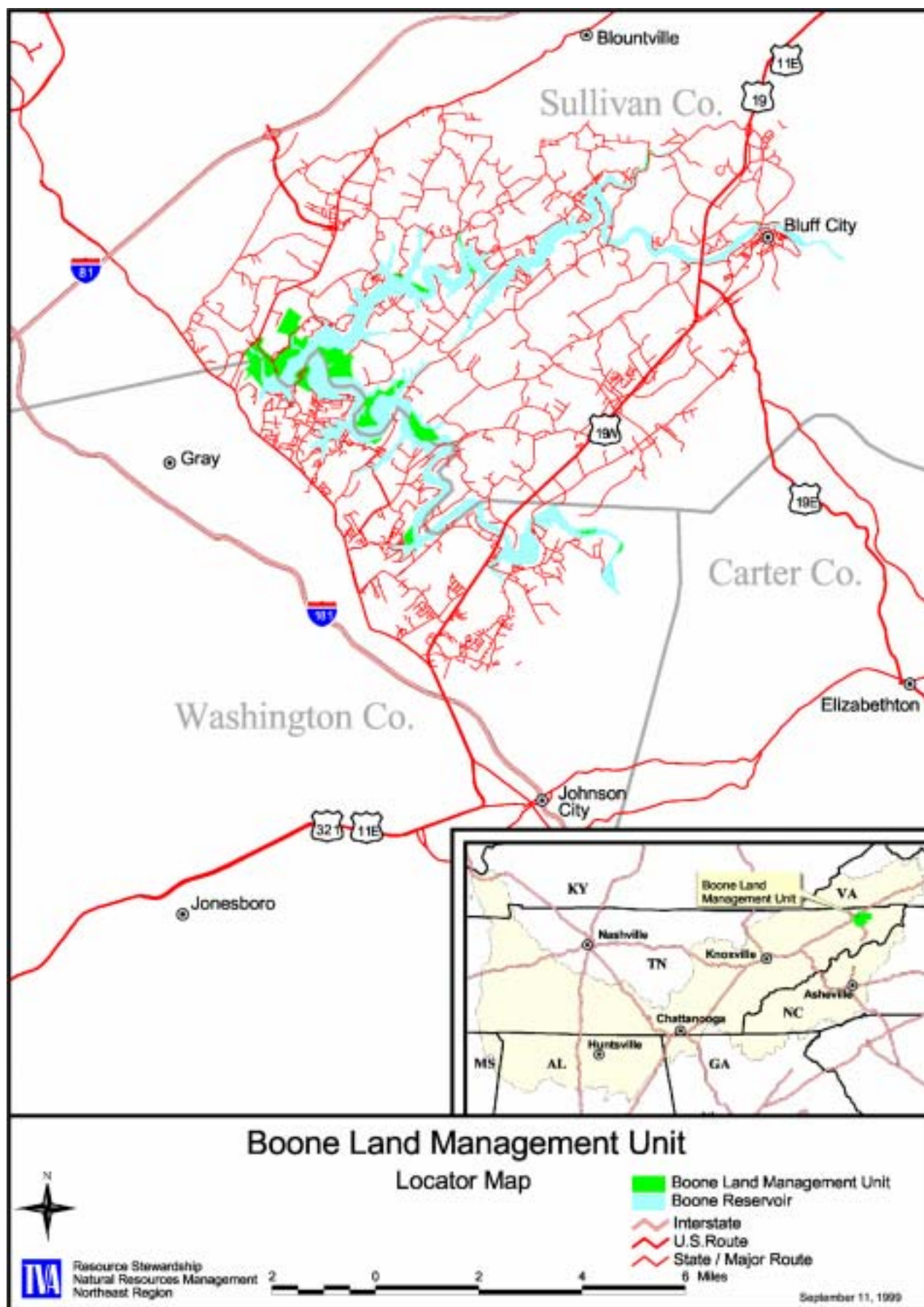
1.1 Resource Management on TVA Lands

Historically, TVA's resource protection and enhancement activities have been planned and implemented as demonstrations of environmentally acceptable and cost-effective management for publicly-owned natural resources. In many instances, these were cooperative efforts with other agencies (federal, state, or local) and regional universities. Largely, these programs were driven by resource conditions rather than by stakeholder need. Consequently, opportunities for public involvement in the planning process were limited.

Future resource management activities are planned using the following principles and guidelines:

- Biotic (vegetation and wildlife) and abiotic (soil and water) resources will be protected and managed to provide a wide range of public benefits.
- Management of these resources will be consistent with applicable federal laws, regulations, and Presidential Executive Orders, and TVA's Policy and Principles on the Environment (TVA, 2001).
- TVA will involve its public land stakeholders in efforts to develop appropriate management strategies.
- TVA will conduct activities that are beneficial to watershed health* and would strive to demonstrate wise watershed protection measures.

¹A watershed is an area in which all receiving water (precipitation) runs to the lowest point, i.e., a stream, river, or reservoir. Healthy watersheds are those that meet clean water, natural resource, and public health goals (USEPA, 1998).



- To the extent practicable, efforts will be made to recover management expenses. However, cost recovery is not a prerequisite for plan implementation. Cost recovery mechanisms could include charges for timber harvests and agricultural licenses, or user fees for certain types of recreational activities. Efforts will be made to share the costs with cooperating groups or agencies. In no instance would TVA seek to recover management costs in a way that compromises ecosystem health or integrity.

For resource management purposes, Boone Unit lands suitable for achieving desired future conditions will be the focal areas. Successful management of publicly-owned lands and natural resources depends on understanding stakeholder needs and concerns related to these resources. Therefore, to ensure that its resource management activities are consistent with public expectations, TVA would:

- Use public and peer agency inputs related to land-based resources as the basis for future allocations of public lands.
- Thereafter, consistent with public needs and concerns, develop Unit-based plans to guide future resource management activities.
- Monitor plan implementation and program performance to ensure that management activities are meeting TVA and the public's expectations.
- Inform and educate the public on the role and importance of scientifically-based management in restoring, enhancing, and protecting natural resources.
- Provide training, informational products, and educational opportunities for others interested in cost-effective natural resources management.
- Demonstrate effective watershed protection/enhancement activities in resource management.

When planning and implementing resource management programs for Boone Unit, TVA:

- Develops and implements cost-effective strategies for sustaining natural resources derived public benefits, while maintaining or enhancing natural biological diversity.
- At appropriate locations, produces natural resources derived products consistent with TVA's multiple use objectives.
- Provides improved opportunities for public-use and enjoyment of forest, wildlife, and other natural resources on TVA lands.
- Protects water quality and improves watershed health.
- Protects sensitive resources, including unique biological, geological, or cultural features; rare, threatened or endangered species; and unusual or exemplary ecological communities.

Consistent with the natural capacities of the lands in question, TVA's resource management programs seek to maintain the highest appropriate levels of biological diversity and watershed health. In this context, biological diversity is defined as the number of different types of life in all of its forms, and at all levels of ecological organization (genetic, species, and ecosystem).

1.2 Other Pertinent Planning or Environmental Documents

In April, 1999 TVA completed a comprehensive land management plan and environmental assessment for all TVA lands on Boone Reservoir (TVA, 1999). This plan allocated land to 7 planning zones, including Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4). Tracts allocated in these 2 zones are included in this resource management unit plan. Decisions and procedures for residential shoreline permitting and when to allow residential access were made through TVA's Shoreline Management Initiative (SMI) programmatic environmental impact statement (EIS) (TVA, 1998). Through this process, TVA generally determined that public land without residential access rights would not be available for access in the future.

1.3 Stakeholder Needs and Concerns (Public Scoping)

For the purposes of this document, resource-dependent “stakeholders” are considered to be groups or individuals who benefit directly or indirectly from TVA’s management of land-based resources or groups and individuals that have valid interest in future management decisions affecting these resources. Examples include local conservation organizations, sportsmen, outdoor enthusiasts (bird watchers, nature photographers, etc.), adjoining landowners, environmental constituency groups (e.g., Tennessee Ornithological Society, Tennessee Conservation League, Sierra Club, The Nature Conservancy, etc.), and peer agencies.

In developing the Boone Unit plan, TVA sought input from stakeholders with varying interests to better determine their needs and concerns regarding future management activities. Initial efforts at collecting stakeholder input focused on agencies such as Tennessee Wildlife Resources Agency (TWRA) that have traditionally cooperated with TVA in resource management activities. Discussion sessions were also held with the Bristol Bird Club, Boone Watershed Partnership, and the State of Franklin Chapter of the Sierra Club. Stakeholders participating in the planning process are listed in Chapter 5.

The mailing list for the Boone Reservoir Land Management Plan was used to solicit input from individual stakeholders. Participant packages, including an explanation letter, questionnaire, and a map of the Unit, were mailed to 305 individuals on April 27, 2000 (see Appendix A-1). In addition, questionnaires were given to other stakeholder groups (i.e., Bristol Bird Club and Sierra Club). A total of 122 questionnaires were returned. Interview results and comments included on questionnaires confirm that stakeholders share a common desire that the Boone Unit should remain available for public-use and enjoyment.

Appendix A-2 provides a summary of information received through the stakeholder questionnaire. According to these findings, wildlife viewing is by far the dominant form of public-use on Boone Unit, followed by hiking, bank fishing, and hunting. Most respondents were pleased with TVA’s previous management efforts or had no comment, while all but two wanted either current or increased levels of resource management. Wildlife habitat improvements for songbirds, wild turkey, white-tailed deer, bobwhite quail, and ruffed grouse were mentioned by most of the respondents, with songbirds, wild turkey, and deer management topping the list.

Regarding the desired future conditions for resources within the Unit (Question 5), the main theme was to keep the TVA lands in a natural condition with no development. The majority of respondents believed that the level of management on the Unit meets their current needs. Forty-three respondents desire future condition conducive to the availability of wildlife habitat, natural forest, and no development. Litter was mentioned by 5 respondents. Comments (Question 6) were consistent with those received in previous questionnaires and surveys conducted by TVA -- clean up litter, improve the quality and availability of wildlife habitat, and improve water quality (see Appendix A-2).

Adjacent private-property owners were also contacted for input regarding management needs and concerns. Names and addresses of landowners whose property adjoins Boone Unit lands were obtained from the Sullivan County Tax Assessors office in Blountville and the Washington County Tax Assessors Office in Jonesboro. Each landowner was sent a package including a letter of explanation, an adjacent land owner questionnaire, and a stakeholder questionnaire with map (see Appendix A-3). Of the 45 landowners contacted, 17 (38 percent) returned questionnaires (see Appendix A-4 for summary). Most of these respondents (13) currently live on their adjacent properties. A common theme mentioned was the interface between the TVA land and private property. Respondents wanted the property line clearly marked and some wanted the TVA land closed to public-use. Others shared many of the same concerns as other stakeholders, i.e., clean up the litter, manage for wildlife, and keep the land in a natural condition.

Data gathered from stakeholders during public scoping for the Boone Reservoir Land Management Plan also reflects stakeholder desires. Desired opportunities for selected recreational activities to be available on Boone Reservoir are reflected in Table 1 below.

Table 1. Recreation Use Around Boone Reservoir

Recreational Activity	Percentage of Total Respondents
Bank Fishing	81%
Nature Photography	63%
Picnicking	61%
Camping in Non-developed Area	37%
Hiking	24%
Bike Riding	18%
Horseback Riding	14%

Boone Land Management Plan stakeholders were also asked the following questions about TVA lands around reservoir:

- ***what do you value most about TVA land,***
- ***what will be the major problems or issues over the next ten years, and***
- ***what features (man-made or natural) do you want to see when looking at the land around the reservoir?***

In response to these questions, most respondents indicated concern about future over-development, trash and litter, water quality conditions, erosion, and fluctuating water levels. Many desired to preserve land in a natural condition and retain access to public land. Stakeholders' comments suggest they value natural resource and public land related features. Additionally, numerous respondents emphasized the need to maintain the natural aesthetic conditions of the land around the reservoir.

In addition to stakeholder-identified needs and concerns, TVA technical staff identified several environmental issues that were incorporated into the analysis of potential environmental effects (see Chapter 3). These included:

- Threatened and endangered species or unique habitats
- Invasion of exotic species
- Wetlands and riparian communities
- Sensitive or unique geological features
- Cultural resources, including historic and archaeological resources
- Water quality
- Air quality
- Recreation
- Visual and aesthetic resources

1.4 Regulatory Issues

When managing resources on lands under its authorities, TVA complies with applicable laws, regulations, Presidential Executive Orders, and standard Best Management Practices (BMPs). TVA reviews proposed resource management activities and prepares appropriate environmental documentation consistent with the requirements of the National Environmental Policy Act (NEPA).

Guidance is also provided by the following laws, regulations, and Presidential Executive Orders:

- Archaeological Resources Protection Act of 1979
- Archaeological and Historic Preservation Act of 1974

- Clean Air Act, As Amended
- Clean Water Act
- Endangered Species Act of 1973, As Amended
- Farmland Protection Policy Act
- Federal Water Project Recreation Act, As Amended
- Land and Water Conservation Fund Act of 1964
- Native American Graves Protection and Repatriation Act of 1990
- National Historic Preservation Act of 1966, As Amended
- Presidential Executive Order 11988 (Flood Plain Management)
- Presidential Executive Order 11990 (Protection of Wetlands)
- Presidential Executive Order 12088 (Federal Compliance With Pollution Control Standards)
- Presidential Executive Order 12372 (Intergovernmental Review of Federal Programs)
- Presidential Executive Order 13112 (Invasive Species)
- Presidential Executive Order 13186 (Migratory Birds)
- Resource Conservation and Recovery Act
- Tennessee Valley Authority Act (1933), As Amended

No federal permits are required for implementation of the proposed Unit Plan. A burning permit would be required from the Tennessee Division of Forestry prior to each controlled burn.

1.5 Comments on the Draft Plan

The draft plan was sent to federal and state agencies and the public for comments on February 26, 2002. Copies of all comments are in Appendix E. TVA responses are included for those comments presenting issues that warranted a response.

CHAPTER 2

ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 The Proposed Action

The proposed action consists of: 1) planning the scope and intensity of TVA's proposed resource management activities for Boone Unit and 2) implementing the Unit management plan.

Three management scenarios representing an array of management alternatives were developed and are described below. These include the Current Management Alternative (i.e., a "no action" alternative), the No Resource Management Alternative, and the Proposed Resource Management Program Alternative. Although the alternatives vary in scope and intensity of management actions, TVA would take necessary measures to comply with applicable laws and regulations under any of these alternatives.

2.2 Alternative A - Current Management

This "no action" alternative provides for continuation of TVA's current resource management activities at Boone Unit. Under this alternative, basic stewardship functions (e.g., periodic litter pickup, boundary maintenance, etc.) would continue; however, other user needs and concerns would not be addressed proactively. Actions in response to catastrophic or unforeseen events or situations (e.g., storm damage, invasive species and nuisance wildlife, or forest pest management) would be dealt with as appropriate, subject to the availability of staff and budgetary resources. TVA would take necessary steps to ensure compliance with various federal, state, and local laws and regulations (see Section 1.4) including the Clean Water Act, Endangered Species Act, the National Historic Preservation Act (NHPA) and Archaeological Resource Protection Act (ARPA).

2.3 Alternative B - No Resource Management

Under the No Resource Management Alternative, TVA would cease virtually all resource management activities for Boone Unit. Discretionary maintenance functions such as boundary maintenance and litter removal would be discontinued. Active management of forest and wildlife would cease, and licensing of TVA agricultural lands would be discontinued. No proactive effort would be made to respond to instances of land abuse or misuse. However, activities required for compliance with various federal, state, or local laws and regulations would be continued.

2.4 Alternative C - Proposed Resource Management Program

The following management plan is based on Unit-specific recommendations from stakeholders (see Section 1.3), and the experience and professional judgment of TVA resource managers and cooperating agencies. This plan contains three major components (public-use management, natural resources management, and resource maintenance and protection). It consists of a series of actions that would be implemented over a period of 25 years. A summary of anticipated year-by-year activities is provided in Appendix B, Table 4. The specifics of the proposed plan are presented in Sections 2.4.1, 2.4.2, and 2.4.3 below. All of the clearing and road construction proposed in forested stands would be conducted during the second year of implementation (2002); future work in these stands would consist of routine maintenance (mowing and/or burning) and periodic renovation (disking, fertilizing, and reseeding) of roads and openings. Conversion of fescue pasture to native warm season grasses (NWSG) would be completed after four years of implementation (2004).

2.4.1 Public-Use Management

The major limiting factor in providing public-use opportunities on Boone Unit land is the lack of overland access to the TVA property. There are only two accessible tracts (Parcels 5 and 28) of land believed to be of sufficient size and capable of meeting current public-use needs. Of these, only the large tract (Stands 1, 3A, 3B, 66, and 67, containing 80 acres) adjacent to the dam reservation has overland public access. Improved access affords TVA better opportunity to manage resources actively, including forest and wildlife habitats. For those areas that have no road access, shoreline access sites would be identified to facilitate access from the water.

Wildlife viewing was the dominant use by stakeholders on Boone, accounting for 536 user trips in the last year. Activities planned to improve this use are aimed at enhancing wildlife habitat diversity and developing a trail for wildlife viewing. Trail development would facilitate hiking, which accounted for 248 user trips by stakeholders.

Bank fishing was the third highest use by stakeholders (222 user trips). Because of access limitations, there are few opportunities to improve this activity in the Unit plan. However, the dam reservation has potential for enhancing bank fishing opportunities.

Most of the proposed activities would benefit hunting on the Unit. Enhanced wildlife habitat, access improvements, and boundary marking would all improve this activity for stakeholders.

To provide for improved public recreational access to TVA lands within Boone Unit, and to manage better the anticipated resultant increase in public-use, TVA would implement the following public-use management actions:

- Create a permanent linear opening (road) about 16 feet wide in Stand 33 (1500 feet) and through Stands 35 and 39 to connect with Stand 38 (2500 feet). Less than 1.5 acres of forest would be cleared in accomplishing the proposed linear openings. Openings would be routed to avoid large trees. Conduct periodic maintenance on openings to facilitate public-use.
- Facilitate public-use where no public road access currently exists by identifying informal access sites at appropriate shoreline locations in Stands 32, 38, 44 (2 locations), and 46. Signs would be posted welcoming public-use of these areas and requesting cooperation in trash collection and protection of shoreline vegetation.
- Develop a trail through Stands 1, 3, and 66 to connect with a proposed trail on the dam reservation for wildlife viewing, hiking, and other non-vehicular activities. Periodic maintenance would be conducted on the trail. Signs would be installed at the parking area that display the length of the trail and give information on the Unit. Benches would be placed at several locations along the trail and interpretive signs would be posted at various locations.
- Periodically repaint and/or place signs along Unit boundary so the people would know what lands are available for their use. The goal is to adequately mark TVA land boundary to facilitate public-use. This activity should reduce potential conflicts between adjacent property owners and users of the TVA lands by clearly establishing the boundary.
- Develop a Unit brochure and map to identify TVA public land and to facilitate public-use of the Boone Management Unit. This brochure would identify daylighted roads, trails, wildlife openings, and reservoir access points. The brochures would also include general use guidelines and other pertinent information on the Unit. Signs would be installed at main access points for the Unit.

Because land access is generally unavailable, this Unit has limited opportunities to increase the number of areas available to the public for bank fishing. This activity was identified by 32 respondents who fished 222 times over the past year. Areas for bank fishing on the Boone Management Unit are limited to boat access sites; whereas overland access sites are present on Boone Land Management Plan, Parcel No. 7, adjacent to the boat launching ramp.

The problem of littering and trash dumping was another concern expressed by stakeholders and adjacent landowners. Boone Management Unit does not have a significant household dumping problem because of the limited road access. However, informal camping along the reservoir shoreline does create litter problems. This litter problem could increase as TVA lands are better identified through proposed signage and production of brochures. A TVA partnership with the Boone Lake Users Association has worked well to help control litter at many of the informal camping sites by installing garbage cans which are emptied periodically. To better control the problem, the following measures would be applied:

- Continue the current partnership with the Boone Lake Users Association to control litter at informal camp sites. Assist with increasing area of coverage by providing garbage cans and bags.
- Build volunteer support and assistance in community and lake cleanups. TVA would serve as the coordinator of cleanups and provide bags, gloves, and other supplies to facilitate such cleanups.
- Install pit toilets or other facilities to control human wastes at informal camp sites.

2.4.2 Resource Management

Based on stakeholder input, TVA lands within Boone Unit should remain undeveloped and natural. To improve and protect land-based resources, and to provide enhanced opportunities for public-use and enjoyment of these resources, TVA would implement the following management activities.

2.4.2.1 Wildlife Habitat Management

Stakeholders' desire improved wildlife habitat and enhanced opportunities for wildlife viewing and hunting. Among wildlife viewers, songbirds were the most desirable group of animals, while game species considered most desirable were wild turkey, white-tailed deer, bobwhite quail, ruffed grouse, and gray squirrel. This preference was also apparent in the Boone Land Management Plan, as respondents desired management of similar species for viewing and hunting (see Table 2).

Table 2. Wildlife Species Management Preference for Viewing and Hunting		
Species	For Viewing	For Hunting
Songbirds	54%	-
Waterfowl	52%	9%
Deer	46%	11%
Turkey	35%	9%
Squirrel	35%	7%
Dove	29%	9%

To improve wildlife habitat conditions on the Boone Unit, management activities would focus on creating permanent openings, converting fescue pasture to wildlife food plots and NWSG, and by daylighting road segments and planting roads in wildlife food plants. Openings, NWSG, and daylighted road segments provide feeding areas for songbirds, turkey, deer, grouse, and quail. Throughout the Unit, areas of late successional hardwood forests would be retained to provide habitat for species preferring this type of forest community.

Within Boone Unit, and on adjacent private property, agricultural lands consist primarily of fescue pasture that provides few, if any, benefits for wildlife. In fact, fescue sod is so dense that quail and some other small animals cannot move through it. Additionally, this species of grass holds little, if any, nutritional value for wildlife. Conversely, the clumping growth pattern of NWSG (e.g., little and big bluestem, Indian grass, switchgrass, etc.) allows wildlife to move freely, and the areas of bare soil between clumps are utilized for feeding and dusting. NWSG provide a food source for songbirds and also have high nutritional value and are decidedly more palatable to certain species of wildlife such as white-tailed deer. These

efforts compliment the purposes and objectives of Executive Orders 13112 (Invasive Species) and 13186 (Migratory Birds).

To improve habitat conditions for songbirds, upland game birds, small game (squirrel and rabbit), eastern wild turkey, and white-tailed deer and to provide habitat enhancements for other nongame species, TVA would:

- Develop wildlife openings by clearing dead pine and scattered pole-sized hardwoods in the central portion of Stand 32 (approximately 8 acres in the dead pine area) and the northeast portion of Stand 38 (approximately 8 acres). Openings would be cleared, disked, fertilized (limed, as needed), and planted to NWSG.
- Create permanent linear wildlife openings by clearing, disking, fertilizing (liming, as needed), and seeding with wildlife food plants such as clover, winter wheat, and orchard grass.
- Convert agricultural license on Stand 66, which is predominately in fescue cover, and currently rented for hay, to NWSG and other wildlife foods. Conversion would consist of application of herbicides (Roundup and Plateau), followed by disking, fertilizing (liming, as needed), and planting. NWSG would be maintained through annual mowing and/or controlled burning. Conversion would be accomplished over a three-year period, taking approximately one-third out of license each year. Hay would be sold from tract after conversion.
- Install wildlife nest boxes (e.g., for bluebirds and wood ducks) along riparian zones and adjacent to wildlife openings.
- Periodically renovate wildlife openings by disking, fertilizing (liming, as needed), and reseeding. Disking maintains the openings in an early successional condition by creating conditions favorable for development of NWSG and forbs preferred by many wildlife species.
- Conduct annual or biennial maintenance on wildlife openings by mowing and/or controlled burns. These activities would maintain these open areas in the early successional condition needed to provide wildlife habitat diversity. Control burning also enhances NWSG by suppressing competition and providing potash from the burn residue.
- Continue to license Stand 68 for agricultural use (hay only). Working with the licensee or other cooperator(s), these tracts may be incorporated in wildlife habitat management program and converted to NWSG.
- Treat invasive exotic species, such as sericea lespedeza, (*Lespedeza cuneata*), and Nepalgrass with Garlon and Roundup (herbicides) where needed to control competition with planted wildlife foods. These exotics have little value to wildlife, and preferred planted species would better meet stakeholder desires for more wildlife for viewing and hunting. This activity would also meet guidelines set forth in Executive Order 13112 (Invasive Species) of 1999.

2.4.2.2 Forest Management

A diversity of forest conditions and ages is important for wildlife. As forests mature, each seral stage provides benefits for different arrays of wildlife species. By maintaining a mosaic of age classes within various forest communities, wildlife diversity and production can be increased. However, forest management opportunities are limited on the Boone Unit because overland access is poor.

TVA would utilize opportunities to improve resource conditions and meet stakeholder desires for wildlife viewing, hiking, and hunting. Recent southern pine beetle infestations have significantly reduced the pine composition on TVA and private lands in the Boone area. Pine is an important resource for numerous wildlife species for food and cover. To restore this important forest component, eastern white pine, which is native to the area, would be planted on four acres of Stands 32 and 38 (killed by southern pine bark beetle). Trees would be randomly spaced with some denser patches to provide thermal cover for wildlife.

2.4.2.3 Scenery Management

Stakeholders have expressed a strong interest in preserving the scenic beauty and natural character of the Boone Unit. As development of private land continues conservation of visual resources on TVA land around the reservoir becomes even more valuable for future generations to enjoy. To maintain and enhance these visual resources, several scenery management strategies would be utilized in conjunction with the other resource objectives and management activities. Together, they would add beauty and variety to the visible landscape, enrich the aesthetic sense of place, and increase public enjoyment of the reservoir lands.

- The permanent openings created for wildlife habitat would be arranged to mimic the appearance of natural lines and forms. The linear openings for Stands 33, 35, and 39 would vary considerably in width along their length to provide meandering rather than straight edges. The goal is to form a string of various sized openings that provide visual change and interest when moving from one to another. A similar approach would be used to set meandering edges around cleared openings on Stands 32 and 38. The trail developed on Stands 1, 3, and 66 would also follow a curvilinear route to wind among groups of trees or other features that offer changing visual interest or surprise at each turn. These may include unexpected opportunities to see wildlife, plants in seasonal change, or a new vista.
- Native shrub species that provide scenic value as well as wildlife food and cover would be preserved in the suspended succession of wildlife openings. Various species such as hollies, viburnums, sumac, and others offer attractive flowers, fruit, and leaf color for seasonal interest throughout the year. They also provide a visual transition along the edges between woodland and fields. Naturally occurring plants would be protected during maintenance of the openings, and may be supplemented with new seedling planting in areas most frequented by pedestrian visitors.
- The planned Unit brochure and map would include information related to visual resources. It would identify locations of outstanding natural features such as bluffs, islands, wetlands, and wildflower areas. It would discuss the scenic value of undisturbed shoreline, and encourage partnerships to preserve the attractive visual character for continued public enjoyment.

2.4.3 Resource Maintenance and Protection

The following strategies would be applied to protect resources within Boone Unit and to ensure consistency with TVA's Policy and Principles on the Environment (TVA, 2001):

- To prevent or minimize soil erosion, all soil-disturbing activities (e.g., road construction) would include use of appropriate BMPs (TVA, 1994).
- For compliance with the NHPA, prior to initiation of any soil-disturbing undertakings TVA would use the phased identification and evaluation approach contained within Section 106 regulations to determine if properties eligible for listing in the National Register of Historic Places (NRHP) would be affected. Such activities would include installation of additional wildlife openings, road construction, controlled burning, and planting. Should historic properties eligible for listing in the NRHP be identified, appropriate measures, including avoidance, protection, and maintenance, would be undertaken.
- Controlled burns would be conducted at appropriate times of the year, and under meteorological conditions suitable for reducing the amount of smoke generated. A smoke management plan would be developed to reduce hazards.
- Trees and vegetation in riparian zones and shoreline buffers would be preserved to protect gray bat food sources.
- To reduce the potential for impacts on Indiana bats, forest management activities in areas of potentially-suitable habitat would be conducted during the fall and winter (November 15 to March 1), when the bats are likely hibernating elsewhere. If it becomes necessary to perform such activities at

other times of the year, surveys would be conducted to determine if Indiana bats are present. These surveys would be coordinated with the U.S. Fish and Wildlife Service.

- In the event that bald eagles begin roosting or nesting on the Boone Unit, roost and nest sites will be managed according to applicable U.S. Fish and Wildlife Service guidelines.

2.5 Comparison of Alternatives

Adoption of Alternative A would result in virtually no change to TVA's current management of TVA land and resources within the Boone Unit. Under this alternative, TVA would continue its current program of limited management. This would include periodic boundary maintenance and occasional trash collection. Over the 25-year implementation cycle, Alternative A would likely maintain existing levels of biological diversity at both the community and species levels and maintain the hydrologic unit's poor rating (see Section 3.1). Stakeholder needs that would not be met under this alternative would include improved wildlife habitat for viewing and hunting, improved hiking and bank fishing opportunities, and litter cleanup.

Adoption of Alternative B would likely result in some locally detrimental effects to lands and natural resources within Boone Unit. Under this alternative, TVA would no longer maintain boundaries, or address stakeholder-identified needs and concerns related to public safety or the condition of the land and associated resources. Lands currently under agricultural license (76 acres) would not be re-licensed and would be allowed to revert to forest cover. Conflicts between various user groups, and between users and adjacent property owners would likely increase. Abuse and misuse of Unit lands would likely increase, and stakeholder needs and concerns such as increased management to improve wildlife habitat, development of hiking trails, and cleaning up trash would not be met or addressed.

Adoption of Alternative C would result in improvements in the quality of available wildlife habitats and provide for improved public access and recreational use opportunities on the Unit (see Table 3). The increased stewardship activities on TVA lands along with implementation of BMPs would likely contribute to improving the hydrologic unit's current "poor" rating.

2.6 Preferred Alternative

Alternative C is preferred because it best meets the needs and expectations of TVA's Boone Unit stakeholders. Likewise, this alternative would improve wildlife habitat quality, reduce resource abuse, and improve accessibility for public recreation.

Table 3. Anticipated Stakeholder Benefits of the Proposed Resource Management Activities

Stakeholder Activity - Questionnaire Results*	Proposed Resource Management Program - Implementation Activity	Stakeholder Benefits
<u>Wildlife Viewing</u>¹	Daylight roads and construct permanent openings to increase habitat diversity and feeding and nesting areas for wildlife	Increased habitat diversity to attract a variety of wildlife for viewing. Roads facilitate access.
	Convert agricultural license to NWSG	Create habitat for species utilizing grassland habitat.
	Develop trail through grassland habitat and connect with trail from dam reservation	Provide access to grassland communities to view a diversity of wildlife species.
	Produce Unit map and brochure	Map of Unit that shows TVA land, roads, reservoir access sites, and wildlife openings.
<u>Hiking</u>²	Develop trail through Stands 1,3, and 66 to connect with trail from dam reservation	Provide hiking opportunity for stakeholders.
	Install signs at the parking area that display the length of the trail and give information on the Unit	Give hikers trail and unit information.
	Install benches at several locations along the trail	Provide a place for hikers to rest and view wildlife.
	Daylight road and mow periodically	Provide hiking opportunities for reservoir access users.
	Produce Unit map and brochure	Map of Unit that shows TVA land, trails, roads, reservoir access sites, and wildlife openings.
<u>Bank Fishing</u>³	Produce Unit map and brochure.	Map of Unit that shows TVA land.
	Reservoir access development - Develop sites to access TVA lands by reservoir where no vehicular access is open.	Identify TVA property on reservoir for bank fishing.
	Address bank fishing opportunities on Boone Dam Reservation	More opportunities are available on the Dam Reservation
<u>Hunting</u>⁴	Daylight roads and construct permanent openings to increase habitat diversity and feeding and nesting areas for wildlife.	Increased wildlife populations and hunting opportunities. Road facilitates access.
	Reservoir access development - Develop sites to access TVA lands by reservoir where no vehicular access is open.	Access to remote TVA lands for hunting.
	Produce Unit map and brochure.	Map of Unit that shows TVA land, roads, reservoir access sites, and wildlife openings.
	Mark TVA boundary line.	Clear delineation of TVA lands for hunters to avoid trespass on adjacent private property

* Questionnaire results are based on stakeholder responses that were received during the planning process; Appendix A-2 provides a summary of all activities.

¹ *Seventy-eight users took 536 user-trips, which represents 39% of total respondents*

² *Forty-seven users took 248 user-trips, which represents 18% of total respondents*

³ *Thirty-two users took 222 user-trips, which represents 16% of total respondents*

⁴ *Fourteen users took 79 user-trips, which represents 6% of total respondents*

CHAPTER 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Regional Setting

Boone Resource Management Unit lies within the Appalachian Ridge and Valley Physiographic Province (Fenneman, 1938), often referred to as the Great Valley of East Tennessee. The topography of this province is typified by long ridges and intervening valleys that trend in a generally southwestern to northeastern direction. Major tributaries feeding Boone Reservoir are the South Fork Holston and Watauga Rivers. These rivers and their tributaries are a part of the greater Tennessee River watershed.

Boone Unit lands are situated within several hydrologic units (HUC): South Fork Holston River (TN-06010102-110 and TN-06010102-130), Beaver Creek (TN-06010102-120), and Watauga River (TN-06010103-150). Unit lands are located on reservoir shoreline created by Boone Dam and only the most upstream areas have flowing water, at low lake levels or during increased discharge from the upstream reservoirs. Beaver Creek (HUC TN-06010102-120), a fourth order stream, is the largest tributary to the reservoir. Most other tributaries are shorter second order streams. The dominant land use within these HUCs is pasture (55 percent), followed by forest (32 percent), urban (8 percent), and crop (2 percent). Open water accounts for the remaining land use coverage (3 percent). All of these HUCs are currently rated poor from a watershed health perspective.

The northern and western portions of Boone Unit have soil types that consist of Waynesboro loam, Talbott-rock outcrop, Dunmore, College-Etowah complex, Montevallo channery silt loam, and litz shaly silty loam (USDA Soil Conservation Service, 1994). Steep slopes are a common attribute within these soil types. Ranging from 5 to 50+ percent, the slopes are conducive to high levels of erosion, equipment limitations, and plant competition. Talbott-rock outcroppings are interspersed throughout these portions of the unit, thus reducing lands available for agricultural use.

Dunmore loamy fine sand, Buncombe loamy fine sand, and cobbly alluvium are the common soil types found in the southern portion of the unit (USDA Soil Conservation Service, 1958). Slopes within these southern soil types range from 0 to 12 percent and are subject to flooding. Large accumulations of gravel and cobblestones allow for easy penetration of plant roots. However, in most areas the land is too stony for cultivation. These soils are considered unfavorable for most agricultural uses, but are generally acceptable for pasture.

Waynesboro loam, found in the northern portion of the unit, and Dunmore soil, located throughout the unit, is the only soils that are well suited for pasture land. All soils found throughout the Boone Reservoir Unit are rated poor to very poor in growing row and small grain crops. According to the soil surveys for Sullivan and Washington counties, all soils within the unit, historically or at present, grow deciduous hardwoods and white pines. Loblolly and Virginia pines are also found throughout most soil types. The Dunmore soil type is the one exception. Lands with this soil type, underlain with large amounts of limestone, consist mainly of redcedar stands due to soil textures varying from silt loam to silty clay.

3.2 History of Land Use and Natural Resources Utilization

Purchased by TVA in the early 1950s, lands within Boone Unit were occupied primarily by small family farms, typical of other rural areas in the eastern Tennessee Valley. Like most of the lands in the region, inhabitants manipulated the landscape to provide a subsistence living. It appears from the age of the current vegetation that almost one-half of Boone Unit lands were in pasture or row crops at the time of TVA purchase. In addition, woodland areas were probably grazed, and burned often to promote the growth of annuals and other forage plants. Woodlots were also selectively harvested periodically to provide construction lumber, fuelwood, and other wood products.

In the early 1960s, TVA established shortleaf pine on five agricultural tracts, totaling 74 acres. These stands were planted very densely and, because of poor pine markets, were not thinned. As a result, the pine grew very slowly and was of low vigor. Epidemic southern pine beetle infestations in the spring and summer of 2000 have killed these stands of pine. An understory of hardwood developed under the pine and will dominate the future forest on these sites. Most common species include dogwood, elm, black cherry, sourwood, and various oaks.

3.3 Ecological Communities and Wildlife Associations

Information on the ecological community types occurring within Boone Unit is provided in Figures 2 and 3, Appendix D, and the Ecological Communities and Forest Stands map (inserted in back pocket). Information on common wildlife species and their habitat preferences is provided in Appendix C. All of the ecological communities occurring within Boone Unit are common in the eastern Tennessee Valley region and the area surrounding Boone Reservoir.

Over 69 percent of the 95 wildlife species thought to occur on Boone Unit utilize three or more of the four ecological community types present. These are: hardwood forest, mixed forest (hardwood and conifers), managed open lands (early successional), and wetlands/riparian communities (see Figure 2 and the inserted map). Some wildlife species, such as white-tailed deer, eastern towhee, and eastern garter snake use most or all of the four types, while others (e.g., common snapping turtle, muskrat, and mallard) are normally be found only in the wetland/riparian communities.

3.3.1 Terrestrial Communities

Boone Unit is situated within the oak-hickory forest region of the Southern Appalachian Ridges and Valleys land resource area (USDA Forest Service, 1969). At present, two forest types are represented on Boone Unit (see Figure 3). In order of decreasing significance, these are hardwood and mixed forests. In aggregate, these communities comprise 84 percent of Boone Unit. Spatial distribution of forest communities is shown in the map insert. Stand distribution and characteristics for specific forest community types occurring on Boone Unit are provided in Appendix D and the map insert.

3.3.1.1 Hardwood Forest Communities

Hardwood forest occupies a total of 297 acres in 32 stands (see Figure 2 and map insert). Hardwood forest cover types account for 50 percent of the total Unit acreage and 59 percent of the total forested acreage. These stands are, more specifically, upland hardwood, cove hardwood, bottomland hardwood, and mixed hardwood (upland, cove, and northern hardwood mixtures) and occupy 199, 16, 15, and 67 acres, respectively. Although hardwood is a major component of the Boone Unit lands, individual stands are small, ranging from less than an acre to 24 acres in size. About 102 acres is dominated by large sawtimber hardwood comprised of upland, mixed, and cove types and dominated by yellow-poplar, hickory, red oaks (black, scarlet, and northern red), white ash, and white oak. Pole and small sawtimber stands occupy 146 acres of the hardwood. Many of these stands are old fields that reverted naturally to hardwoods; the lower quality sites are occupied by black locust, hickory, elm, and oaks, while the more productive sites have sugar maple and yellow-poplar. An additional 74 acres of sapling and pole-size hardwood, which developed under pine stands, has recently been released as a result of pine mortality in 2000. These areas consist of scattered red maple, box elder, black locust, yellow-poplar and various oak species. The remaining 49 acres of hardwood are in various-aged stands, comprised of trees from pole to large sawtimber size. Most of these stands are also the result of natural reversion on old fields. Hardwoods range in age from 20 to 90 years old.

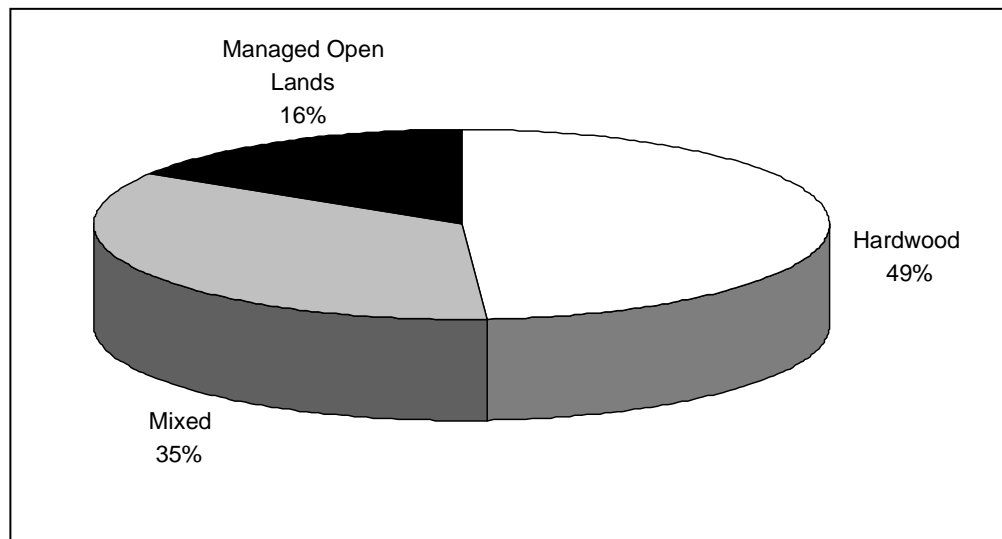


Figure 2. Ecological Communities by Percent Cover

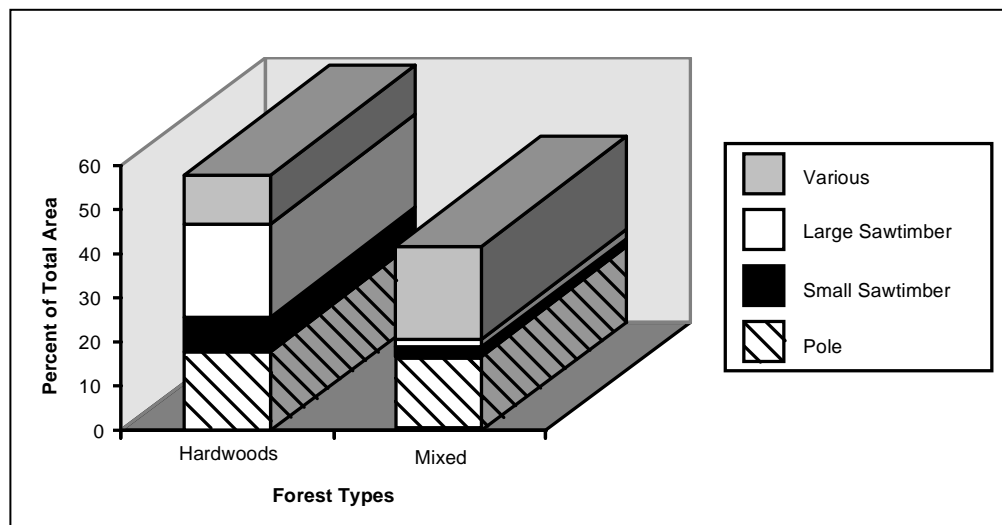


Figure 3. Forested Community Types by Size Class

A majority (62 percent) of amphibians, reptiles, raptors, songbirds, and game mammals common on Boone Unit utilize the hardwood community type (Appendix C). Species of concern to stakeholders include songbirds, white-tailed deer, wild turkey, quail, and grouse.

Under current management (Alternative A), no forest management activities are planned in hardwood stands. Thus, other than accounting for growth and natural decay, selection of Alternative A would have no long- or short-term effects on this community type, or any wildlife species using it. Selection of Alternative B would result in reversion of land under agricultural license. This could increase hardwood acreage if fields reverted to this type; however, the more likely scenario is reversion (at least initially) to the mixed forest types. This would have an insignificant effect on wildlife using hardwood communities.

Management activities proposed under Alternative C would result in a minor decrease in hardwood acreage by conversion of sapling and pole-size hardwood (former pine stands which have been killed by southern pine beetle) to wildlife openings. Because of the large amount of hardwood in the local areas and region, the proposed creation of wildlife openings would have an insignificant impact on wildlife species utilizing hardwood communities.

3.3.1.2 Pine Forest Communities

Prior to 2000, a total of 74 acres of pine, in five stands, were present on the Boone Unit. These stands were predominantly planted shortleaf pine that was established in the early 60s on old fields. Because of poor pine markets, these stands were not thinned or maintained, creating overstocking and low vigor. Epidemic southern pine beetle infestations killed all of these pine stands in the spring and summer of 2000. Salvage harvest of the infested stands was not practical. As a result, most of the pine would be allowed to stand dead, and eventually fall. A hardwood understory of red maple, box elder, black locust, yellow-poplar, and various oak species, which range from sapling to pole size, has developed beneath the pine. These areas should develop into hardwood stands in the future.

Under Alternatives A and B this community type would remain unchanged because there are no plans to plant pine. The proposed management program (Alternative C) would increase the pine community type by 4 acres through planting of white pine.

3.3.1.3 Mixed Hardwood-Conifer Forest Communities (Pine-cedar-hardwood; pine-hardwood; cedar-pine)

Mixed forest communities occupy 204 acres (34 percent), comprising 9 stands, on the Boone Unit. These stands include mixtures of redcedar-hardwood, pine-hardwood, and pine-redcedar-hardwood. Three mixed stands, totaling 130 acres, are the result of old-field succession and are dominated by Virginia and shortleaf pine, yellow-poplar, black oak, and hickory. The remaining mixed stands are situated on rocky sites and bluffs with mixtures of Virginia pine, redcedar, hickory, elm, and scarlet oak. This ecological community type varies from pole to small sawtimber size and ranges in age from 30 to 90 years old. Mid-stories and understories in these stands contain dogwood, red maple, greenbrier, poison ivy, and a variety of shrubs.

The hardwood-conifer community type also provides a diversity of habitats for wildlife. Sixty-two percent of wildlife species occurring on Boone Unit use this mixed forest community (see Appendix C). In these forests, hardwoods provide food in the form of hard and soft mast, while nearby conifers provide thermal and escape cover. Conifers also provide important roosting and nesting habitat for various game and nongame birds.

Under Alternative A, B, or C this forest community type would remain unchanged. Adoption of any of the three alternatives would not result in measurable or significant effects on wildlife species use of this community type.

3.3.1.4 Managed Open Lands

The Boone Unit includes 76 acres of agricultural lands in two separate tracts. Tracts 66 (54 acres) and 68 (22 acres) are currently licensed for hay production for a five-year period, which began January 1, 1999. Where agricultural licenses are used to maintain open land conditions, licensees are required to maintain vegetative buffers of at least 50 feet along streams and reservoir shoreline to protect water quality and improve wildlife habitat. Licensed pasture lands consist primarily of fescue sod with scattered patches of trees. The remaining open land includes 11 acres that was once part of the Tract 66 agricultural license and was converted to wildlife habitat several years ago. TVA would continue to license Tract 68 for agricultural use (hay only) but probably work with the licensee or other cooperators to incorporate it into the wildlife habitat management program. Other open areas are small maintained strips along Beaver Creek.

Managed open lands and associated forest “edge” are important habitats for a variety of mammals, birds, and reptiles. Forty-five percent of the common wildlife species occurring on the Boone Unit are known to use this community type (see Appendix C).

Under Alternative A, TVA would continue licensing existing agricultural tracts resulting in insignificant effects on wildlife. To protect water quality and provide riparian edge habitat, licensees would be required to maintain vegetative buffers adjacent to streams and reservoir shorelines. Under Alternative B, these tracts would not be re-licensed, and existing fields would slowly revert to forest cover. Over the long term, the majority of this acreage would revert to the mixed hardwood-conifer forest community types. For the short term, this reverting habitat, which is currently scarce in the area, would benefit many wildlife species by providing food and cover. However, long-term benefits would be minimal, since the resulting stands of mixed hardwood-conifer forests are common in the vicinity of the Boone Unit.

Under Alternative C, Tract 66 would be converted to NWSG and managed as open land. This would increase the habitat value of this tract by replacing fescue sod with species providing greater food and cover value for wildlife. Also, sixteen acres of scattered sapling- and pole-size hardwood (dead pine stand) would be cleared to create permanent wildlife openings that would provide grassland for species preferring this habitat type, in a predominantly forested area. As mentioned above, TVA would continue to license Tract 68 for agricultural use (hay only) but probably incorporate it into the wildlife habitat management program. Adoption of Alternative C would not result in significant effects on forest wildlife and would be beneficial for species that use open lands. Conversion to NWSG complements TVA’s efforts to meet guidelines set forth in Executive Order 13112 (Invasive Species) of 1999.

3.3.1.5 Wetland and Riparian Forest

Boone Unit lands are adjacent to Boone Reservoir. On this reservoir, forested, scrub-shrub, and/or emergent wetlands communities have developed in narrow bands along some shorelines and in the head of coves, where hydrologic conditions are suitable for moist-site vegetation. Black willow, buttonbush, sycamore, and green ash are the most common species occurring in forested and scrub-shrub communities, while emergent wetland species include cattail, bullrush, and water willow. These areas of the reservoir-induced wetlands seasonally provide shallow water habitat for fish spawning, resting and foraging habitat for shorebirds, wading birds, resident and migrant waterfowl, and riparian and wetland inhabiting mammals, such as mink, muskrat, beaver, and raccoon. The deeper portions of the reservoir provide deep-water habitat for resident and migrant waterfowl and other water birds.

Hodge Island (Stand 44) is the largest wetland on Boone Reservoir, and includes a variety of emergent, shrub/scrub, and forested wetland types. Many of these wetlands developed in scattered depressions which were created by past mining activities. Hodge Island is part of the larger Austin Springs wetlands complex, which provides wildlife habitat of considerable regional significance.

Riparian forest communities are typical of most of TVA’s tributary reservoirs, where upland forest types (e.g., hardwood, mixed forest, and eastern redcedar) occur adjacent to reservoir shoreline. Because of the seasonal draw-downs, the reservoir has little, if any, influence on shoreline vegetation. Consequently, these forest communities occurring along shorelines within Boone Unit are similar in species composition to those found elsewhere on the Unit. This is also true for the herbaceous and shrub layers in these riparian communities. Riparian forest also occurs along Beaver Creek, a large tributary, with box elder, red maple, sycamore, and other bottomland species.

These wetland and riparian community types represent about two percent on the total forest acreage on the Unit.

No impacts are expected in these community types under any of the three alternatives. Under Alternatives A, B, and C wetland and riparian communities, and the wildlife species they support, would be unaffected.

3.3.2 Aquatic Communities

Aquatic habitat in the littoral (near shore) zone is greatly influenced by underwater topography and backlying land use. The littoral zone is the most productive region of a reservoir. Most important fish species use littoral habitats because of their spawning requirements and the availability of submerged cover (i.e., rocks, logs, brush, etc.). Aquatic invertebrates and small fish in this area also provide an important food source for other fish, water birds, and semi-aquatic mammals. Underwater topography in the vicinity of the Boone Unit varies from moderately steep, with extensive areas of exposed bedrock near the river channel, to typically shallower in embayments and coves. Shallow areas also occur further from the river channel and tributary stream channels, particularly in the upper end of the reservoir. Rock is an important constituent of littoral aquatic habitat over much of the reservoir, either in the form of rock outcrops, a mixture of rubble and cobble, or gravel along main channel shorelines. Cove substrate is typically soil and gravel with scattered cobble. Undeveloped shoreline is mostly wooded, so fallen trees and brush provide woody cover in those areas.

A survey was conducted on Boone Reservoir in February, 1997, to arrive at a modified Shoreline Aquatic Habitat Index (SAHI) score which would indicate the quality of aquatic habitat adjacent to the shoreline. Scoring parameters (metrics) used at Boone included five of the seven metrics used in the SAHI surveys previously done on selected reservoirs and described in the SMI EIS (TVA 1998). They are similar, however, and describe essentially the same categories of conditions that contribute to quality aquatic habitat (i.e., riparian cover, aquatic habitat diversity, substrate, and bank stability as indicated by extent of erosion). A major difference was that the SAHI at Boone did not attempt to correlate the quality of the aquatic habitat to the adjacent onshore land uses. The average score at Boone was 12.9 (of a possible 20), which indicates generally "fair" aquatic habitat. Higher scores were seen in the quality of stable, diverse cover in the drawdown zone in most areas; problem areas were bank stability and a lack of good shoreline canopy in many areas.

TVA's Reservoir Vital Signs Monitoring Program (VSMP) has sampled benthic macroinvertebrates (e.g., lake bottom-dwelling, readily visible aquatic worms, snails, crayfish, and mussels) and fish in Boone Reservoir. Compared to other reservoirs sampled in the ridge and valley ecoregion, the benthic community of Boone Reservoir rated generally poor to fair in samples taken from sites in the forebay (the area nearest the dam) and in the South Holston and Watauga River arms of the reservoir from 1993 to 1999 (samples were not taken in all years). The common problem in benthic samples was collection of only animals tolerant of poor water quality, such as tubificid worms (Dycus and Baker 2000).

The VSMP also has included annual fish sampling at Boone from 1991 through 1995, and in 1997 and 1999. Compared to other storage reservoirs of similar physical characteristics in the ridge and valley ecoregion, the fish assemblage at the forebay and South Holston and Watauga River mid-reservoir stations rated poor to fair. Ratings are based primarily on fish species diversity and composition; also considered in the rating is the percentage of the sample represented by omnivores and insectivores, overall number of fish collected, and the occurrence of fish with anomalies such as diseases, lesions, parasites, deformities, etc. In fall 1999 samples, the forebay and South Holston mid-reservoir stations rated fair and the Watauga River mid-reservoir station rated poor. A total of 25 fish species was collected; more abundant species in the overall sample were gizzard shad, common carp, spotfin shiner, bluegill, and largemouth bass (Dycus and Baker 2000).

Under either Alternatives A or B, there would likely be no direct adverse effects on aquatic communities because there would be little or no change from current conditions under either alternative. Because of a lack of proactive efforts to control abuses and illegal dumping, aquatic impacts could be greater under Alternative B. Adoption of Alternative C is expected to result in insignificant, short-term adverse impacts on aquatic resources because minimal activities are proposed near the shoreline and BMPs will be implemented to control erosion from activities on backlying lands. To the extent that shoreline vegetation is protected or enhanced, and erosion is reduced on backlying lands, beneficial long-term results would be expected.

3.4 Exotic Species

Provisions of Presidential Executive Order 13112 (see Chapter 1) provide for federal agencies, to the extent practicable and within budgetary constraints, to “prevent introduction of invasive exotic species; detect, monitor, and control populations of such species; conduct research on methods of control; and educate the public.” Several species of invasive exotic plants including Japanese honeysuckle, princess tree, sericea lespedeza, and Nepalgrass are present on Boone Unit. In addition to these, a number of tracts that are currently being licensed for agricultural use are in fescue grass, which is an exotic species. Although exotic, two species of lespedeza (Korean and kobe) and white (ladino) clover could be planted on roads and openings to enhance wildlife habitat. These species are not considered invasive and, therefore, are not precluded by the provisions of the executive order.

Nepalgrass and sericea lespedeza have caused problems on daylighted roads in other Units within TVA Resource Stewardship’s Northeast Region. Aggressive competition has suppressed planted clover and preferred lespedeza species (Korean and kobe) and could possibly cause the same problems on the proposed Boone openings.

Aside from occasional flocks of European starlings, no exotic animal species are known to occur on the Unit.

Under Alternatives A or B, there would likely be an increase in existing populations of exotic species on open areas in the Unit. Adoption of Alternative C would decrease exotic species populations through treatment and eradication initiatives and facilitate better establishment and growth of preferred wildlife food species. This would help meet stakeholder desires for better wildlife habitat.

3.5 Endangered and Threatened Species

Several species listed by the state of Tennessee or under the Endangered Species Act are known from the vicinity of the Boone Unit (Table 4). Field surveys of the unit were conducted during preparation of the Boone Reservoir Land Management Plan. No state- or federally-listed threatened or endangered species were observed on the Boone Unit during these surveys. A few of the species listed in Table 4, however, could occur on the Boone Unit. In addition to these species, the Indiana bat, federally listed as endangered, could occur on the Boone Unit.

Although the bald eagle is not known to regularly occur on Boone Unit lands, suitable roost and/or nest habitat is present. The bald eagle is increasing in numbers, both in the vicinity of Boone Reservoir and across the Tennessee Valley, and is under consideration by the U.S. Fish and Wildlife Service (USFWS) for removal from the list of threatened species. In the event bald eagles begin to roost and/or nest on Boone Unit lands, regardless of whether it is listed, TVA management activities under all alternatives will follow applicable USFWS guidelines for eagle management. With this commitment, none of the alternatives are expected to adversely affect the bald eagle.

Gray bats forage primarily over water and along shorelines, and require caves for roosting and raising their young. No caves occupied by gray bats are known from the Boone Unit. Gray bats may, however, forage along the unit shoreline and over adjacent areas of Boone Reservoir. Because there would be little disturbance of shoreline vegetation, none of the alternatives are expected to impact the gray bat.

Although there are no known occurrences of Indiana bats on Boone Reservoir or lands in the vicinity, management precautions will be taken in case this species is present. Indiana bats occupy caves during the winter. During the summer, they utilize areas of mature deciduous forest having open mid-stories with an abundance of trees with exfoliating (i.e., loose or peeling) bark. Suitable roost trees include dead trees of several species, and live trees such as shagbark hickory and white oak. The greatest threats to Indiana bats posed by forestry activities are disturbance of hibernating colonies in caves and destruction of summer roosting and foraging habitat (Hammond and Sweeney, 1997). No caves suitable for Indiana bats occur on the Boone Unit. As indicated above, little or no work is planned over the next 25-years that would affect mature hardwood forest under any of the alternative actions. The construction of the linear

openings/roads and the conversion of two young hardwood stands (resulting in part from the effects of the southern pine beetle) to wildlife openings would have little effect on suitable bat habitat. In addition, to further reduce the potential for impacts on Indiana bats, forest management activities in areas of potentially suitable habitat would be conducted during the fall and winter (November 15 to March 1), when the bats are likely hibernating elsewhere. If it becomes necessary to perform such activities at other times of the year, surveys would be conducted to determine if Indiana bats are present. These surveys would be coordinated with the U.S. Fish and Wildlife Service. Therefore, implementation of any of the alternatives, including Alternative C, the Preferred Alternative, would not likely adversely affect the Indiana bat or habitats important to its survival (see Section 3.14).

Because only basic stewardship functions and no active management of forest and wildlife would occur under either Alternative A or B, none of the state-listed species would be adversely affected. Under Alternative C, activities are proposed that would increase grassland habitat and be potentially beneficial for species requiring this ecological community type, such as grasshopper sparrows and barn owls. The sharphead darter is not known to occur in either Boone Reservoir or its tailwaters, and also would not be affected.

Table 4. State- and Federally Listed Plants and Animals Reported From Within a 5-Mile Radius of the Boone Reservoir

Category	Scientific Name	Common Name	Federal Status	State Status
Plant	<i>Berberis canadensis</i>	American barberry	none	SC
Plant	<i>Buckleya distichophylla</i>	Sapsuck	none	THR
Plant	<i>Juglans cinerea</i>	Butternut	none	THR
Plant	<i>Lonicera canadensis</i>	American fly honeysuckle	none	SC
Plant	<i>Lonicera dioica</i>	Smoothleaf honeysuckle	none	SC
Plant	<i>Silene caroliniana pennsylvanica</i> ssp.	Wild pink	none	THR
Fish	<i>Etheostoma acuticeps</i>	Sharphead darter	none	NMGT
Bird	<i>Ammodramus savannarum</i>	Grasshopper sparrow	none	NMGT
Bird	<i>Tyto alba</i>	Common barn owl	none	NMGT
Bird	<i>Haliaeetus leucocephalus</i>	Bald eagle	THR	THR
Mammal	<i>Myotis grisescens</i>	Gray bat	LE	END
Mammal	<i>Sorex longirostris</i>	Southeastern shrew	none	NMGT
Mammal	<i>Synaptomys cooperi</i>	Southern bog lemming	none	NMGT

LE: Listed Endangered

THR: Threatened

SC: Special Concern

NMGT: Deemed in Need of Management

END: Endangered

3.6 Cultural Resources

Historic properties found near Boone Reservoir are described in the Boone Reservoir Land Management Plan (TVA, 1999). Archaeological surveys were conducted during the planning process and are further described in McNutt et al., 1997. The specific locations of these archaeological resources are not described herein for resource protection purposes. There are no standing structures, historic or otherwise, on or immediately adjacent to land subject to this Unit Plan. One small timber stand (#63) is visible from the Flourville Historic District.

A Programmatic Agreement (PA) for reservoir land management plans in Tennessee is currently being developed in consultation with the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and consulting parties such as Indian tribes under the regulations implementing Section 106 of the National Historic Preservation Act (NHPA).

Under any alternative, TVA will conduct the phased identification and evaluation procedures as set forth in 36 CFR § 800.4(b)(2), regulations of the Advisory Council on Historic Preservation implementing Section 106 of NHPA, in order to identify, evaluate, and assess effects on historic properties. This means that additional cultural resources surveys would be completed prior to initiation of proposed soil-disturbing activities. Should cultural resources be identified, appropriate measures, including avoidance and possible mitigation, would be taken to ensure compliance with Section 106 of the NHPA.

No vegetation clearing or soil-disturbing activities are proposed under either Alternatives A or B. Under Alternative A, TVA would continue the present process of case-by-case review in TVA-controlled areas potentially subject to soil-disturbing actions such as access improvements (e.g., road construction, etc.) and clearing/maintenance of wildlife openings through phased identification and evaluation of historic properties. Historic properties eligible for listing in the National Register of Historic Places (NRHP) would be avoided, maintained, and protected whenever possible. If avoidance of the historic property is not a viable alternative, then treatment to minimize or mitigate adverse effects on the historic property would be conducted. Under either Alternative A or B, TVA would take necessary steps to ensure compliance with regulatory requirements of the NHPA.

Under Alternative C, phased identification and evaluation of historic properties would be conducted in areas of proposed soil-disturbing activities and other undertakings that have potential to affect historic properties eligible for listing in the NRHP prior to approval of those activities. Such activities would include installation of additional wildlife openings, road construction, controlled burning, and plantings. Should historic properties eligible for listing in the NRHP be identified, appropriate measures, including avoidance, protection, and maintenance, would be taken to ensure compliance with Section 106. Furthermore, TVA would protect archaeological resources in compliance with the Archaeological Resources Protection Act. Therefore, no adverse effects on such properties or resources are anticipated. The SHPO offers no objection to implementation of activities associated with Alternative C, the Preferred Alternative; and concurs that phased compliance is an appropriate strategy to comply with Section 106 (see Appendix E).

3.7 Water Quality

Boone Dam is located at South Fork Holston River mile 18.6, approximately 1.4 miles below the confluence of the Watauga and South Fork Holston Rivers. At full pool, the surface area of the reservoir is approximately 4,310 acres and the shoreline is about 131 miles long. Impounded waters extend 17 miles in the South Fork Holston arm and 15 miles in Watauga arm. Reservoir depth ranges from 129 feet near the dam (forebay) to shallow riverine conditions in upper reaches where the headwaters enter the reservoir. Consistent with TVA's multipurpose operation objectives, Boone is subject to a substantial fluctuation between summer and winter pool elevations; fluctuating 25 feet between elevations 1382 feet and 1357 feet msl (mean sea level).

The overall ecological condition for Boone Reservoir was poor in 1995, 1997, and 1999, the three most recent years for which reservoir monitoring results are available; the 1999 score was the lowest recorded to date (no samples were taken in 1996). The only indicator which rated good in 1999 was dissolved oxygen (DO) at the Watauga River mid-reservoir site. The only other water quality-related indicators that rated fair were sediment at the forebay and South Holston River mid-reservoir site (chlordan was found at these sites). All other station indicators rated poor, including chlorophyll levels at all sampling locations. Chlorophyll ratings are based on sampling results compared to what would be considered the "natural" nutrient level in a watershed (i.e., nutrient levels would be expected to be lower in a reservoir in a nutrient-poor watershed than in a more fertile watershed) (Dycus and Baker 2000).

Alternatives A and B include no new clearings or road construction activities. Consequently, there is little potential for adverse water quality effects attributable to TVA activities. Reduced maintenance and the lack of proactive measures under Alternative B would likely result in some increase in the amount of erosion due to less control of activities such as off-road vehicle use and vegetation damage. Implementation of Alternative C, the Preferred Alternative, could result in minor, short-term water quality impacts, primarily localized increases in turbidity, associated with soil-disturbing activities. However, as noted in Section 2.4.3, implementation of BMPs would greatly reduce the potential for such impacts.

Adoption of Alternative C is expected to result in only insignificant, short-term, effects because BMPs would control erosion and other runoff resulting from natural resource management and public-use.

3.8 Air Quality

National Ambient Air Quality Standards (NAAQS) establish concentration limits in the outside air for six pollutants: particulate matter, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead. These standards are designed to protect public health and welfare. An area where any air quality standard is violated is designated as a nonattainment area for that pollutant, and emissions of that pollutant from new or expanding sources are carefully controlled. There are currently no nonattainment areas in the vicinity of Boone Management Unit. In addition, Prevention of Significant Deterioration (PSD) regulations that restrict emissions and any significant reduction in ambient air quality include protection of national parks and wilderness areas that are designated PSD Class I air quality areas. The two closest Class I areas are the Linville Gorge Wilderness Area, about 60 kilometers (km) (37 miles) southeast of the Boone Management Unit, and the Great Smoky Mountains National Park, about 95 km (59 miles) southwest of the Unit.

Among the three alternatives, only Alternative C would involve activities that might cause impacts on ambient air quality. The development and maintenance of clearings, corridors, and other wildlife habitat improvements would include emissions from fossil fuel combustion in equipment used in clearing, mowing, disking, seeding, and fertilizing activities and from open burning/prescribed burning activities. Air pollutants would include minor amounts of such gases as carbon monoxide and nitrogen oxides as well as particulate matter, including fine particulates produced by burning of vegetation. Of these, particulate matter would have the greatest potential impact. All of these activities would be infrequent and short-term in duration. Therefore, these emissions would not be expected to result in any offsite concentrations that exceed the NAAQS, even for particulates.

Particulate matter from burning is primarily the product of incomplete combustion, so the emission rate of particulates varies depending on the intensity and combustion efficiency of the fire. Fire prescriptions and ignition techniques that maximize combustion efficiency tend to minimize emissions of particulate matter as well as carbon monoxide. Extinguishing smoldering material reduces particulate emissions because emission rates during the smoldering phase of a fire are much higher than during the flaming phase. Controlled burning during favorable meteorological conditions allows rapid dispersion of smoke to further minimize pollutant concentrations in the ambient air. Particulate matter in the form of smoke and dust can degrade visibility, and visibility impairment is an important issue in PSD Class I areas. Because the distances to the nearest Class I areas are more than 50 km (31 miles), controlled burning during appropriate meteorological conditions on small areas in the Boone Management Unit are not expected to affect visibility in these Class I areas.

Alternatives A and B do not involve the use of controlled burns and other improvement activities. Therefore, neither of these alternatives, if adopted, would result in negative effects on air quality. Under Alternative C, prescribed burns and operation of equipment would be conducted periodically to maintain early successional and open land communities and to improve wildlife habitat. However, the emissions of air pollutants would be minor and transitory, and approaches to maximize combustion efficiency, extinguish smoldering, and conduct controlled burns during favorable meteorological conditions would further reduce the magnitudes of these emissions. While this would result in minor, temporary, and localized negative effects on air quality, the impacts on local and regional ambient air quality would be insignificant.

3.9 Recreation Resources

Because of its relatively small size, close proximity to three large cities, and increased residential development, Boone Reservoir has become one of the most intensively used reservoirs in the TVA system. Of the 130.8 miles of shoreline on Boone Reservoir, only 20.7 miles (16 percent) is TVA-owned and managed. The only other publicly owned shoreline (.5 miles) and acreage (200 acres) on Boone is Winged Deer Park, which is operated by the City of Johnson City. Currently, the relative density of

commercial marinas is among the highest in the system with about 600 acres of surface area per marina. This private and commercial development will make the Boone Unit lands even more valuable as a public resource for recreational use in the future.

The absence of public overland access is the main limiting factor to recreational use on the 594-acre Boone Unit. Most of the recreational use is facilitated by boat access and includes camping, wildlife viewing, bank fishing, and hiking. Informal camping is especially popular on the more gentle slopes around Deer Lick Island. These informal camping sites are managed in partnership with the Boone Lake Users Association which contracts litter pickup during the summer season. Hunting is also popular on the larger tracts, and is accessed from the reservoir, or by permission from adjacent private landowners. Safety zones have been established on the Deer Lick peninsula and on the northeast portion of the tract which lies at the forks of the rivers.

Boone Dam reservation has recreational facilities that include boat launching ramp, swimming beach, trails, and open grassy areas. Future trail development on the Boone Unit is expected to connect with trails on the dam reservation. Alternative A includes no provisions for trail development or road improvements to facilitate wildlife viewing, hiking, and hunting. Selection of this alternative would, however, allow for maintenance of the property boundaries. Implementation of Alternative B would inconvenience recreational users because the property boundaries would not be maintained.

Implementation of Alternative C, the Preferred Alternative, would result in road and trail improvements that would benefit wildlife viewers, hikers, bank fishermen, hunters, campers, and others seeking recreational opportunities within the Unit. For those areas where road access is restricted, shoreline access sites would be developed to facilitate access from the water (see Section 2.4.1).

3.10 Visual and Aesthetic Resources

The visual character of Boone Unit land is predominantly a natural, forested landscape. The parcel size varies from 2 to 151 acres, and TVA lands are intermixed with private lands along the narrow, winding lake. The wooded shoreline within the Unit is relatively undisturbed, which provides a distinct visual contrast to the private residential and commercial recreation development nearby. Existing woodlands include both deciduous hardwood and mixed forests of various ages. The terrain varies from moderately sloping to quite steep. Rock outcrops, wetlands, occasional hay fields, and some scattered open meadows provide variety and scenic accents in the landscape. As a result of southern pine beetle damage, patches of dead trees add adverse visual contrast in several locations. Together the natural elements form a tranquil, generally harmonious mosaic of rural shoreline.

Lands within the Boone Unit are seen both close-up and at some distance by residents and recreational visitors alike. They are viewed from the lake, opposite shore, adjacent lands, and the parcels themselves. Moderate to heavy informal use can be seen on some shoreline areas during the warmer months, which adds discordant visual congestion and adverse contrast along the woodland edge.

In the Boone Land Management Plan, 8 parcels, totaling 364.8 acres and about 9.7 miles of shoreline, were allocated to sensitive resource management as a result of their distinctive visual qualities. The scenic features include steeply sloping woodland ridges, undisturbed forest shoreline, attractive rock bluffs 155 and 250 feet high, islands that provide visual accents, scenic wetlands, a wildflower meadow, and park-like groves of mature trees. In contrast, much of the informal shoreline use is also seen along these parcels.

Under Alternative A, most visual resources would remain the same. Continuing expansion of informal shoreline use may result increasingly substantial adverse visual impact over time. Without limits and setbacks, the growing campsite clearing, temporary facilities, and litter may increase discordant visual congestion and negatively contrast along the scenic shoreline.

Under Alternative B, some visual resources would likely suffer negative impacts over time. Without public-use management and trash cleanup, the attractive qualities of shoreline and backlands would likely deteriorate from apathetic, insensitive use. Indiscriminate clearing, abusive activities and littering would

increase the visible discordant contrast. In addition, the natural succession to all forest would slowly reduce the scenic variety and harmonious contrast visible in the landscape.

Under Alternative C, the scenic qualities of some areas on TVA land would be enhanced. Meandering meadows with occasional patches of wildflowers and increased diversity of wildlife would add visual richness and accent to the woodland landscape. Removing dead pines and replanting with ornamental white pine in random-sized groups would improve scenic attractiveness. Protective management of the more sensitive areas such as bluffs, wetlands and islands would help preserve these attractive natural features for future enjoyment. Shoreline setbacks and site limits would help maintain the tranquil wooded shoreline by limiting uncontrolled spread of informal use. Continued expansion may still increase discordant visual congestion and adverse contrast over time. Implementation of Alternative C would provide a generally positive impact on the visual resources and aesthetic sense of place for both residents and recreational visitors.

3.11 Unavoidable Adverse Impacts

No long-term or significant adverse impacts are expected from implementation of Alternative A or C. Adoption of Alternative B would result in some reduction in community-level biological diversity; however, these reductions are insignificant when considered on a local or regional basis.

3.12 Relationship of Short-term Uses and Long-term Productivity

Under Alternative C, the Preferred Alternative, implementation of proposed management actions would improve the quality and diversity of wildlife habitats on Boone Unit. Such actions could potentially result in some short-term, localized effects to visual and water resources. However, these would be minor and of short duration. The proposed management actions would prove beneficial to long-term wildlife habitat improvements, as well as provide multiple benefits to recreationists and other stakeholders who use and appreciate the land based resources within Boone Unit. Significant reductions in the long-term productivity of Boone Unit are not likely under any of the three alternatives.

The Boone Unit contains 594 acres, including 297 acres of hardwoods. All of the ecological communities occurring within Boone Unit are widely distributed in the eastern Tennessee Valley region. Under Alternative C, a less than one percent decrease in the hardwood acreage would occur through clearing of 16 acres for wildlife openings. TVA would rigorously apply forestry and agricultural BMPs prior to and during the conduct of these planned activities. Archaeological sites would be surveyed prior to any soil-disturbing activities.

Because implementation of these actions on Boone Unit would neither cause nor contribute to adverse trends on forests and associated ecological communities and affect a very small amount of forest lands in the region, TVA has determined that the incremental and cumulative effects of adoption of Alternative C, when added to the past, present, and reasonably foreseeable future actions, are regionally insignificant. Similarly insignificant cumulative effects could be expected on water and air quality, aquatic communities, and visual resources. Additionally, no long-term effects on regional biodiversity are anticipated from implementation of Alternative C.

3.13 Irreversible and Irretrievable Commitments of Resources

Other than expenditures of funds for implementing management actions, no irreversible or irretrievable commitments of resources are anticipated under any of the alternatives. Under Alternative C, proposed wildlife management activities would remove hardwood from approximately 16 acres to create forest openings, and restore pine on 4 acres by planting white pine. If forest clearings are not maintained, these areas would revert back to hardwood over time. Consequently, the proposed changes in forest cover would not constitute an irreversible or irretrievable commitment of resources. Similarly, development of proposed roads, trails, and informal access sites would not constitute an irreversible land use change, as any areas affected by such development would naturally revert to forest if the facilities are removed or not maintained.

3.14 Mitigative Measures/Commitments

1. Best Management Practices, including those prescribed for forestry (TVA, 1994) will be implemented for any soil disturbing activities to prevent or minimize soil erosion.
2. Surveys to determine if any National Register eligible properties are potentially affected will be conducted prior to initiation of any soil disturbing activity, including installation of wildlife openings, road construction, and trail development. If such properties are found, TVA would conduct a phased resource review and evaluation under the stipulations in the PA for reservoir land management plans in Tennessee with the SHPO and report its findings.
3. Trees and vegetation in riparian zones and shoreline buffers will be preserved to protect gray bat food sources.
4. To reduce the potential for impacts on Indiana bats, forest management activities in areas of potentially-suitable habitat would be conducted during the fall and winter (November 15 to March 1), when the bats are likely hibernating elsewhere. If it becomes necessary to perform such activities at other times of the year, surveys would be conducted to determine if Indiana bats are present. These surveys would be coordinated with the U.S. Fish and Wildlife Service.
5. In the event that bald eagles begin roosting or nesting on the Boone Unit, roost and nest sites will be managed according to applicable U.S. Fish and Wildlife Service guidelines.
6. Controlled burns will be conducted in accordance with Tennessee open burning regulations.
7. BMPs for agriculture, including maintenance of vegetative buffers, will be included in agricultural licenses (see Appendix F).

CHAPTER 4

LIST OF PREPARERS

The following TVA staff participated in the preparation of this plan and environmental assessment:

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Cassandra L. Wylie, Statistician, Norris, Tennessee

CHAPTER 5

LIST OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED

Federal Agencies

US Army Corps of Engineers, Nashville
 USDA, Forest Service, Cherokee National Forest, Cleveland
 Department of the Interior, Office of Environmental Policy and Compliance, Washington

State Agencies

First Tennessee Development District
 Tennessee Department of Environment and Conservation - Environmental Policy
 Recreation
 Natural Heritage
 Water Pollution Control
 Tennessee Historical Commission
 Tennessee Department of Transportation
 Tennessee Department of Agriculture
 Tennessee Department of Economic and Community Development
 Tennessee Wildlife Resources Agency

Non-governmental Organizations

Bristol Bird Club
 Bristol, Tennessee
 State of Franklin Chapter, Sierra Club
 Johnson City, Tennessee
 Boone Watershed Partnership
 Kingsport, Tennessee

Adjacent Landowners

Ruth Yoakley-Combs
 Kingsport, Tennessee
 Kathleen Evans
 Johnson City, Tennessee
 Fred Gregory
 Gray, Tennessee
 William Hale
 Cleveland, Ohio
 Charles R. Hatch
 Kingsport, Tennessee
 Larry Jacobs
 Warren, Michigan
 Thomas Joseph
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 Philip Kellar
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John R. Willingham
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Kelley S. Wingate
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CHAPTER 6

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Appendix A-1

Stakeholder Letter and Questionnaire

April 27, 2000

Dear Stakeholder:

The Boone Reservoir Land Management Plan and Environmental Assessment (EA) was approved by the TVA Board on April 21, 1999. This plan allocates (zones) what the 880 acres of TVA lands around Boone Reservoir will be managed for by placing each tract in one of seven management zones. The next step in management of these lands is the development of implementation plans that identify what specific activities will occur. A Natural Resources Management Plan and EA will be developed for the 566 acres that are allocated (zoned) for natural resources management (Zone 3 - Sensitive Resource Management and Zone 4 - Natural Resource Conservation). This plan/EA (Boone Management Unit Plan) will be developed in year 2000.

The objectives of the Boone Management Unit Plan are:

- To provide sustainable amenities and benefits to the public using the Boone Unit through effective management of resources (particularly wildlife and forests); and
- To protect sensitive resources in accordance with existing regulations, requirements, and principles of good stewardship.

TVA will solicit public input at various stages of plan development and will utilize public input gathered during the Boone Reservoir Land Management Plan. Initially, we will meet with stakeholders and cooperators to identify major issues. Individual customers can participate by returning the enclosed questionnaire. There will also be an opportunity to comment on the draft management plan, which will be completed by summer.

I hope this letter adequately explains the Unit planning process and why we are developing this management plan. If you should have any questions concerning the questionnaire or planning process, please contact me at 865/632-1667 or by Email at JCFEEMAN@TVA.GOV.

Sincerely,

Joe C. Feeman, Jr., Forester
Northeast Region
Resource Stewardship

Enclosures

Please answer the following questions pertaining to your use of the TVA lands on Boone Reservoir that are shown on the attached map. Remember, only the lands that are zoned for natural resource management are being addressed in this questionnaire.

1. Do you use the designated TVA lands on Boone Reservoir? Yes _____ No _____. If yes, please check the appropriate box(es) below:

USE	Number of trips in last year			
	1-3	4-6	7-10	more than 10
Bank fishing				
Bicycling				
Camping				
Hiking				
Horseback riding				
Hunting				
Wildlife viewing				
Other				
Other				

2. How do you feel about the current management activities on this Unit?

Agree _____ Disagree _____ No Comment _____

3. What level of resource management effort should TVA practice on this Unit in the future?

Increase management _____ Continue management as now _____ Decrease management _____

4. What species of wildlife should TVA manage for on this Unit? (please check all applicable)

SPECIES	Agree	SPECIES	Agree
Deer		Squirrel	
Fox		Songbirds	
Grouse		Turkey	
Quail		Other nongame species	
Rabbit		Other	
Raccoon		Other	

5. What would you like this Unit to look like in the future?

6. Additional Comments:

If you would like to receive a copy of the Draft management plan, please write your name and address below:

Appendix A-2

Summary of Input Received Through Stakeholder Questionnaire

Please answer the following questions pertaining to your use of the TVA lands on Boone Reservoir that are shown on the attached map. Remember, only the lands that are zoned for natural resource management are being addressed in this questionnaire.

1. Do you use the designated TVA lands on Boone Reservoir? Yes 96 No 26. If yes, please check the appropriate box(es) below:

USE	Number of trips in last year					
	1-3 (2)	4-6 (5)	7-10 (8)	>10 (12)	Total # users	Total user trips
Bank fishing	8	10	3	11	32	222
Bicycling	8	2		4	14	74
Camping	6	5	4		15	69
Hiking	25	6	6	10	47	248
Horseback riding	1		1	1	3	22
Hunting	6	3	2	3	14	79
Wildlife viewing	27	14	8	29	78	536
Other: boating		1	1	4	6	61
Picnicking				1	2	12
Study/Day Camp	11	2			13	32
Walking				2	2	24
Total					226	1379

2. How do you feel about the current management activities on this Unit?

Agree 56 Disagree 17 No Comment 36

3. What level of resource management effort should TVA practice on this Unit in the future?

Increase management 47 Continue management as now 50 Decrease management 2

4. What species of wildlife should TVA manage for on this Unit? (please check all applicable)

SPECIES	Agree	SPECIES	Agree
Deer	94	Squirrel	73
Fox	72	Songbirds	100
Grouse	84	Turkey	94
Quail	89	Other nongame species - <u>Reptiles & amphibians</u>	25
Rabbit	69	Other <u>nongame species</u>	7
Raccoon	64	Other <u>elk</u>	1
		Birds & waterfowl	14
		Bobcat, otter, bats	3

5. What would you like this Unit to look like in the future?

Comment	Number of Respondents
Leave the Unit as it is now	11
Keep as natural as possible	10
No development	7
Keep natural forest present	5
Keep the Unit clean	5
Provide wildlife viewing areas	3
Minimize development	2
Designate picnic areas	2
Designate hiking trails	2
Create a natural preserve near Highway 75 (w/ programs for children)	2
Need an area for camping	2
No camping	2
No hunting	2
Limited hunting	2
Higher water elevations throughout the year	2
Increase patrol for safety purposes	1
Designate swimming areas along shoreline	1
More areas accessible to handicap (i.e.,: fishing pier)	1
Limited access	1
Enlarge parking lot at Boone Dam ramp	1
Create food plots for wildlife	1
Create nesting habitats near parking areas (i.e.,: nest boxes)	1
Increase water quality	1
Minimize man made structures	1

6. Additional Comments:

- As a past renter of TVA, I felt I was not treated right in the new leasing bidding. I was not allowed to sow grain and the new people were permitted to do this. I rented at Boone Dam.
- If we could get deer and turkey stated at Unit 39 at Boones Creek Marina set out Paw Paw trees, persimmon trees, and other natural foods for wildlife. The island at Rockinghams Dock has these.
- Opposed to anymore bridges across the lake.
- I would love to see some deer and turkey in Unit 39.
- Nice to see the TVA working in conjunction with the TWRA.
- I am not completely filled in on what has been done for management. I agree it needs management simply to control human population on and around the lake. Lake levels are dropped dramatically in winter. This practice does not allow for aquatic vegetation that the entire ecosystem needs.

- Your recent plans for Boone land use looks exceptional for plants, wildlife, birds, sensitive habitat.
- I appreciate having access to public-owned tracts for wildlife viewing.
- Would like to see some efforts to increase quail populations and provide protection for rookeries on private lands through education of property owners.
- Speedboats, jet ski, motorcycles, and ATV are destroying habitat and running off wildlife. Areas like these need to be protected from such disturbances.
- We went to Boone Lake and it was filthy and dirty.
- Clean the lake and improve the litter, stop littering.
- Clean Boone Reservoir.
- Clean Boone Lake.
- Clean Boone Lake up.
- Clean the lake.
- Keep boardwalk clean. Don't let people put dead fish or liver on the railing.
- Doing good job. I like the ramps access.
- Try to keep lake levels up longer in the fall.
- Restricted areas with trails, allowing access by trail only.
- I live on Boone Lake. I like the water—it's beautiful, I just wish people wouldn't throw trash on it.
- We heed more involvement of TVA in development affecting the lake, i.e., road and bridge construction, strip mines in the drainage area, conduct boaters and jet skis on the lake.
- Some of the land that is used for hunting should be on a limited basis, such as mussel loading and archery only.
- I would like to commend TVA for their effort in land management. The wildlife and the people are the recipients that will benefit greatly from your good works. Thank you TVA.
- Power generation (instead of water power) than many of the resource management concerns.
- We have a summer home on Boone Lake and have used it for 31 years. It is great to see TVA get up these Boone Management Units around the lake and will be managed. Thanks for having us on your mailing list.
- Hopefully we can manage more land in the future.
- Boone Lake has too much private land, it needs what natural land it has to help wildlife and the public can have access to the lake and what forests are left.
- I am not in the vicinity of Boone Reservoir. My land is below South Holston Dam opposite the weir dam and joins TVA property above the shoreline.
- Increase water quality—now and in future.
- A high percentage of land surrounding Boone Lake is already developed. We need to retain current undeveloped land as it is in a natural state.
- Eagles have returned to Boone Lake and should be a priority.
- I feel these areas should be left alone with little or no "management." Recreational use (hunting, fishing, hiking, camping, bird watching) should be permitted, but in the natural state not with trails, picnic tables, structures, etc., build or erected. Leave the land alone. Management usually takes away from the natural, aesthetic atmosphere.

- Would like to see more TVA land used for camping, bank fishing, picnicking, etc. (for people less fortunate to own a boat.
- With chronic erosion now affecting all areas of the lake, unless something is done to limit—boat speeds and engine size, the serious ecological damage will continue. Please introduce no wake zones on all coves.
- It should be maintained as it has been and leave it for wildlife, camping, fishing, etc., but I would eliminate hunting or restrict it somewhat.
- Be a top priority. Open grassland habitat is declining in region.
- You can't accommodate all users or desires without destroying the natural beauty. You must find ways to allocate these scarce resources—limited parking, pricing, permits, boat size limits, etc.
- Maintaining the native ecosystem needs to be more heavily emphasized even it reduces other possible uses.
- Let individuals clear up some camping areas by cutting down small trees and brush around the lake.
- Note—deer, raccoon, and squirrel are over populated.
- Our condo association located near the red unit west of 11E at DeVault ridge has its own boat ramp and some of us fish from the boat slips. I do not use the public services.
- Maintain high lake level throughout the year, not just summer months.
- Maintain the forest area as example of our mixed hardwood, natural forest. The less cutting, off-road riding, partying and other disturbance, the better.
- Access is limited mostly to boating. I feel that more people would utilize the lands if there was more access by land. Private landholders around TVA basically have this land to themselves.
- Thank you for asking.
- Would like for lake to stay full of water year round.

Appendix A-3

Letter of Explanation and Questionnaire sent to Adjacent Landowners

June 24, 2000

Dear Stakeholder:

The Boone Reservoir Land Management Plan and Environmental Assessment (EA) was approved by the TVA Board on April 21, 1999. This plan allocates (zones) what the 880 acres of TVA lands around Boone Reservoir will be managed for by placing each tract in one of seven management zones. The next step in management of these lands is the development of implementation plans that identify what specific activities will occur. A Natural Resources Management Plan and EA will be developed for the 566 acres that are allocated (zoned) for natural resources management (Zone 3 - Sensitive Resource Management and Zone 4 - Natural Resource Conservation). This plan/EA (Boone Management Unit Plan) will be developed in year 2000.

The objectives of the Boone Management Unit Plan are:

- To provide sustainable amenities and benefits to the public using the Boone Unit through effective management of resources (particularly wildlife and forests); and
- To protect sensitive resources in accordance with existing regulations, requirements, and principles of good stewardship.

As part of the planning process, we are gathering public input on current and future management activities. We are especially interested in what our neighbors think, so please fill out the enclosed questionnaire and return it to our office in the envelope provided. I have also enclosed a copy of the questionnaire that we sent to TVA land users to gather their input. Feel free to complete that questionnaire also.

I hope this letter adequately explains the Unit planning process and why we are developing this management plan. If you should have any questions concerning the questionnaire or planning process, please contact me at 865/632-1667 or by Email at JCFEEMAN@TVA.GOV.

Sincerely,

Joe C. Feeman, Jr., Forester
Northeast Region
Resource Stewardship

Enclosures

Adjacent Landowner Questionnaire
Boone Management Unit

1. Do you live on the property adjacent to the Boone Unit? Yes_____ No _____.
2. How long have you lived next to the TVA property? _____.
3. Is the TVA property boundary well-marked next to your property? Yes_____ No _____.
4. Do you allow the public to hunt on your property? Yes_____ No _____.
5. Is your property “posted” against public access? Yes_____ No _____.
6. Do you use the TVA land in the Boone Unit? Yes_____ No _____.
7. What are your suggested improvements for the TVA land in the Boone Unit?

8. Should access be restricted to the TVA property? Yes _____ No _____.
9. Have you ever called the TVA Police about problems on the TVA land? Yes___ No ____.
10. From your standpoint as an adjacent landowner, what could TVA do to improve public-use and access to the Boone Unit?

11. Additional Comments.

If you would like to receive a copy of the Boone Unit plan please provide your name and address below.

Appendix A-4

Summary of Input Received Through Adjacent Landowner Questionnaire

Adjacent Landowner Questionnaire
Boone Management Unit

1. Do you live on the property adjacent to the Boone Unit? Yes 13 No 4.
2. How long have you lived next to the TVA property? X= 18 years.
3. Is the TVA property boundary well-marked next to your property? Yes 9 No 7.
4. Do you allow the public to hunt on your property? Yes 2 No 15.
5. Is your property "posted" against public access? Yes 10 No 6.
6. Do you use the TVA land in the Boone Unit? Yes 9 No 8.
7. What are your suggested improvements for the TVA land in the Boone Unit?
 - Post signs delineating TVA property.
 - The TVA property adjacent to ours has no land access that we know and is surrounded by private ownership or water. We wish it to be restricted for safety purposes. Hunting and camping pose dangers.
 - We have lots of wildlife on the unit next to me. Continue to leave it natural like in the past.
 - Let TWRA manage this property for wildlife. Some timber harvest, clear cutting, and wildlife food plots, all wildlife would benefit from this practice.
 - Grant me a 100-foot, 100-year right-of-way over TVA land.
 - This land beside my property should stay natural and sensitive like it is. It is a historical site.
 - Keep it like it is. Do not change.
 - More parking at Boone Dam Beach. Bathhouse away from observation area.
 - Removal of dead trees (pine especially) to preclude increased fire danger.
 - Leave it alone
 - Outside johns may be treaded with lime for human waste. I see a lot of this in a lot of camp site it don't look or smell to good.
 - Clear trails for walking.
 - Let TWRA manage suitable lands for wildlife. This might include observation station, walking trails, and some "No Hunting" areas. Unfortunately, at present there is no patrolling by TVA personnel and littering and trespassing is a big problem.
8. Should access be restricted to the TVA property? Yes 11 No 6.
9. Have you ever called the TVA Police about problems on the TVA land? Yes 2 No 14.

10. From your standpoint as an adjacent landowner, what could TVA do to improve public-use and access to the Boone Unit?

- Do something to stop the littering in the woods! I know you can't post enforcers, but make people more aware that it is a finable offense—maybe raise the fines.
- This TVA property is so close to residences it should not be open to public-use.
- It is perfect as it is. Don't over engineer this project.
- Might swap land to improve access.
- I feel like if the public-use and access comes in here they will abuse it.
- More parking—do not use observation bathrooms for a bath house.
- Public-use and access is currently near maximums, especially on weekends and holidays. I wouldn't recommend greater access.
- Nothing.
- I think Unit 39 at Boone Creek Marina should be natural and sensitive unit. I think you are doing a **Great Job** for what I have seen at all TVA lands.
- Hunting close to houses should not be permitted because of danger from strangers and shooting.
- Clear trails for walking. Beware that drug sales take place off the point beyond Sonny's Marina (on the water and sometimes near the Bean maker on land).

11. Additional Comments.

- From a wildlife standpoint there is too much woodland, not enough cover and food, you cannot depend on mast anymore with the seasons we are experiencing, it is hard for wildlife to survive without food and cover.
- Since we are adjacent to the TVA unit we have a great opportunity to enjoy the wildlife that live in the Unit. Protection of the wildlife is one of our primary concerns.
- All coves on reservoirs should not allow water skiing, fast boats or jet skis. Let the coves be used for peaceful and quiet, fishing, etc. Slow speed only NO WAKES. Please help us.
- I feel that TVA should build and maintain live fences between landowners (adjacent) and TVA. I spent in excess of \$1300 to have the fence build between TVA land and my land.
- I have a dead tree near my house with a TVA marker on it. I would like for it to be cut down.

If you would like to receive a copy of the Boone Unit plan please provide your name and address below.

Appendix B

Annual Activities Summary - FY 2001-2025

Table 5. Annual Activities Summary

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
2001	Public Use	Unit Maint.	Unit Maint	Inspect and Mark Boundary	Various	
2001	Natural Res.	Wildlife Mgt.	Habitat Dev.	Install nest boxes	Various	
2001	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	54
2001	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2002	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2002	Natural Res.	Wildlife Mgt.	Habitat Dev.	Renovate/Construct Road (1500 feet)	33	NA
2002	Natural Res.	Wildlife Mgt.	Habitat Dev.	Renovate/Construct Road (2500 feet)	35,39	NA
2002	Natural Res.	Wildlife Mgt.	Habitat Dev.	Construct Wildlife Opening	32	2
2002	Natural Res.	Wildlife Mgt.	Habitat Dev.	Construct Wildlife Opening	38	2
2002	Natural Res.	Wildlife Mgt.	Habitat Enhance	Conversion of Ag Tract to WSG	66	18
2002	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	36
2002	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2002	Natural Res.	Forest Mgt.	Plant	Plant White Pine	32, 38	4
2003	Public Use	Unit Maint.	Develop Trail	Develop and Construct Trail	1,3,66	NA
2003	Public Use	Public Info.	Devel Broch/Map	Distribute Brochures and Maps	NA	NA
2003	Public Use	Public Info.	Dev. Inform. Sign	Install Signs on Unit	NA	NA
2003	Public Use	Unit Maint.	Access Enhance	Dev Reservoir Access Sites	32,38, 44, 46	NA
2003	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2003	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2003	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2003	Natural Res.	Wildlife Mgt.	Habitat Enhance	Conversion of Ag Tracts to WSG	66	18
2003	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	18
2003	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2004	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2004	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2004	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2004	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2004	Natural Res.	Wildlife Mgt.	Habitat Enhance	Conversion of Ag Tracts to WSG	66	18
2004	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2005	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2005	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
2005	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2005	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2005	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2005	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2006	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2006	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2006	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2006	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2006	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2006	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2007	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2007	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2007	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Wildlife Openings	Various	4
2007	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Road Openings	Various	NA
2007	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2007	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2008	Public Use	Public Info.	Reprint Brochure	Reprint Brochures	NA	NA
2008	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2008	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2008	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2008	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2008	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2008	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2009	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2009	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2009	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2009	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2009	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2009	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2010	Public Use	Unit Maint.	Unit Maint	Inspect and Mark Boundary	Various	
2010	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
2010	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2010	Public Use	Unit Maint.	Unit Maint	Road maintenance	33, 35,39	NA
2010	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2010	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2010	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2010	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2011	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2011	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2011	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2011	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2011	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2011	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2012	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2012	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2012	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Wildlife Openings	Various	4
2012	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Road Openings	Various	NA
2012	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2012	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2013	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2013	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2013	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2013	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2013	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2013	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2014	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2014	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2014	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2014	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2014	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2014	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2015	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
2015	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2015	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2015	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2015	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2015	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2016	Public Use	Public Info.	Reprint Brochure	Reprint Brochures	NA	NA
2016	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2016	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2016	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2016	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2016	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2016	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2017	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2017	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2017	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Wildlife Openings	Various	4
2017	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Road Openings	Various	NA
2017	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2017	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2018	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2018	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2018	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2018	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2018	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2018	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2019	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2019	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2019	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2019	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2019	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2019	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2020	Public Use	Unit Maint.	Unit Maint	Inspect and Mark Boundary	Various	
2020	Public Use	Unit Maint.	Trail	Maintain Trail	1,3,66	NA

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
			Maintenance			
2020	Public Use	Unit Maint.	Unit Maint	Road maintenance	Various	NA
2020	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2020	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2020	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2020	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2020	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2021	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2021	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2021	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2021	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2021	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2021	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2022	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2022	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2022	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Wildlife Openings	Various	4
2022	Natural Res.	Wildlife Mgt.	Habitat Maint	Renovate Road Openings	Various	NA
2022	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2022	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2023	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2023	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2023	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2023	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2023	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2023	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50
2024	Public Use	Public Info.	Reprint Brochure	Reprint Brochures	NA	NA
2024	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2024	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2024	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2024	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2024	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2024	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50

Fiscal Year	Category	Subcategory	Task Type	Task Description	Stand #	Acres
2025	Public Use	Unit Maint.	Trail Maintenance	Maintain Trail	1,3,66	NA
2025	Public Use	Unit Maint.	Unit Maint	Clean up partnership	Various	NA
2025	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Wildlife Openings	Various	4
2025	Natural Res.	Wildlife Mgt.	Habitat Maint	Maintain Road Openings	Various	NA
2025	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	68	17
2025	Natural Res.	Wildlife Mgt.	Ag License	Administer Agricultural license	66	50

Appendix C

Ecological Communities Utilized by Terrestrial and Wetland Wildlife Species Expected to Occur on the Boone Management Unit

Table 6. Common Wildlife Species and Their Habitat Preferences

Species By Common Name	Scientific Name	Hardwood Forest	Pine Forest	Mixed Forest	Cedar Lands	Managed Open Lands	Riparian/ Wetland (Lake Shoreline and ponds)
Bullfrog	<i>Rana catesbeiana</i>						X
Eastern Narrowmouth Toad	<i>Gastrophryne carolinensis</i>						X
Green Frog	<i>Rana clamitans</i>						X
Wood Frog	<i>Rana sylvatica</i>	X	X	X	X		X
Spring Peeper	<i>Pseudacris crucifer</i>						X
Fowler's Toad	<i>Bufo woodhousei</i>	X	X	X	X		
Spotted Salamander	<i>Ambystoma maculatum</i>	X	X	X	X		X
*Dusky Salamander	<i>Desmognathus fuscus</i>	X	X	X	X		X
Longtail Salamander	<i>Eurycea longicauda</i>	X	X	X			
Spring Salamander	<i>Gyrinophilus porphyriticus</i>						X
Northern Slimy Salamander	<i>Plethodon glutinosus</i>	X	X	X	X		
Red Salamander	<i>Pseudotriton ruber</i>	X		X			X
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>	X	X	X	X	X	
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>	X	X	X	X	X	X
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>	X	X	X	X		
Northern Water Snake	<i>Nerodia sipedon sipedon</i>						X
Northern Fence Lizard	<i>Sceloporus undulatus hyacinthinus</i>	X	X	X	X		
Five-lined Skink	<i>Eumeces fasciatus</i>	X	X	X	X	X	
Broadhead Skink	<i>Eumeces laticeps</i>	X	X	X	X		X
Common Snapping Turtle	<i>Chelydra serpentina serpentina</i>						X

Species By Common Name	Scientific Name	Hardwood Forest	Pine Forest	Mixed Forest	Cedar Lands	Managed Open Lands	Riparian/Wetland (Lake Shoreline and ponds)
Painted Turtles	<i>Chrysemys picta</i> spp.						X
Red-eared Slider	<i>Trachemys scripta elegans</i>						X
Eastern Box Turtle	<i>Terrapene carolina carolina</i>	X	X	X	X	X	
Red-shouldered Hawk	<i>Buteo lineatus</i>	X		X			X
Red-tailed Hawk	<i>Buteo jamaicensis</i>	X	X	X	X	X	
American Kestrel	<i>Falco sparverius</i>					X	
Great Horned Owl	<i>Bubo virginianus</i>	X	X	X	X	X	X
Barred Owl	<i>Strix varia</i>	X	X	X	X		X
Common Screech Owl	<i>Otus asio</i>	X		X		X	
Turkey Vulture	<i>Cathartes aura</i>	X		X		X	
Black Vulture	<i>Coragyps atratus</i>					X	
American Crow	<i>Corvus brachyrhynchos</i>	X	X	X	X	X	
Hairy Woodpecker	<i>Picoides villosus</i>	X		X			X
Pileated Woodpecker	<i>Dryocopus pileatus</i>	X	X	X	X		
Yellow-shafted Flicker	<i>Colaptes auratus</i>					X	X
Downy Woodpecker	<i>Picoides pubescens</i>	X		X	X		X
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	X	X	X	X	X	X
Belted Kingfisher	<i>Megaceryle alcyon</i>						X
Great Blue Heron	<i>Ardea herodias</i>						X
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>						X
Green Heron	<i>Butorides striatus</i>						X
Spotted Sandpiper	<i>Actitis macularia</i>						X
Killdeer	<i>Charadrius vociferus</i>					X	X

Species By Common Name	Scientific Name	Hardwood Forest	Pine Forest	Mixed Forest	Cedar Lands	Managed Open Lands	Riparian/Wetland (Lake Shoreline and ponds)
Wild Turkey	<i>Meleagris gallopavo</i>	X	X	X	X	X	
Bobwhite Quail	<i>Colinus virginianus</i>					X	
Ruffed Grouse	<i>Bonasa umbellus</i>	X	X	X	X	X	
Mourning Dove	<i>Zenaida macroura</i>					X	
Canada Goose	<i>Branta canadensis</i>					X	X
Wood Duck	<i>Aix sponsa</i>						X
Mallard	<i>Anas platyrhynchos</i>						X
Blue-winged Teal	<i>Anas discors</i>						X
American Black Duck	<i>Anas rubripes</i>						X
Pied-bill Grebe	<i>Podilymbus podiceps</i>						X
Northern Cardinal	<i>Cardinalis cardinalis</i>	X	X	X	X	X	
Eastern Bluebird	<i>Sialia sialis</i>					X	
American Goldfinch	<i>Carduelis tristis</i>	X	X	X	X	X	
Blue Jay	<i>Cyanocitta cristata</i>	X	X	X	X		
Carolina Chickadee	<i>Parus carolinensis</i>	X	X	X	X	X	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>					X	X
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	X	X	X	X	X	X
American Robin	<i>Turdus migratorius</i>	X	X	X	X	X	
Northern Mockingbird	<i>Mimus polyglottos</i>					X	
Carolina Wren	<i>Thryothorus ludovicianus</i>	X	X	X	X	X	
Indigo Bunting	<i>Passerina cyanea</i>					X	
Tufted Titmouse	<i>Parus bicolor</i>	X	X	X	X		
White-breasted Nuthatch	<i>Sitta carolinensis</i>	X	X	X	X		X
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	X	X	X	X	X	
Black-and-white Warbler	<i>Mniotilta varia</i>	X	X	X	X		
Wood Thrush	<i>Hylocichla mustelina</i>	X		X		X	

Species By Common Name	Scientific Name	Hardwood Forest	Pine Forest	Mixed Forest	Cedar Lands	Managed Open Lands	Riparian/Wetland (Lake Shoreline and ponds)
Eastern Wood Pewee	<i>Contopus virens</i>	X	X	X	X		
Red-eyed Vireo	<i>Vireo olivaceus</i>	X	X	X	X	X	
Pine Warbler	<i>Dendroica pinus</i>	X	X	X	X		
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	X		X		X	
White-tailed Deer	<i>Odocoileus virginianus</i>	X	X	X	X	X	X
Gray Squirrel	<i>Sciurus carolinensis</i>	X		X	X		
Southern Flying Squirrel	<i>Glaucomys volans</i>	X		X			
Eastern Chipmunk	<i>Tamias striatus</i>	X	X	X	X	X	
Raccoon	<i>Procyon lotor</i>	X	X	X	X		X
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>					X	
Bobcat	<i>Lynx rufus</i>	X	X	X	X		X
Red Fox	<i>Vulpes vulpes</i>					X	
Gray Fox	<i>Urocyon cinereoargenteus</i>	X	X	X	X	X	
Coyote	<i>Canis latrans</i>					X	
Mink	<i>Mustela vison</i>						X
Muskrat	<i>Ondatra zibethicus</i>						X
Opossum	<i>Didelphis virginiana</i>	X	X	X	X	X	
Striped Skunk	<i>Mephitis mephitis</i>	X	X	X	X	X	
Wood Chuck	<i>Marmota monax</i>				X	X	
White-footed Mouse	<i>Peromyscus leucopus</i>	X	X	X	X	X	
Eastern Mole	<i>Scalopus aquaticus</i>	X		X		X	
Least Shrew	<i>Cryptotis parva</i>	X	X	X		X	X
Short-tailed Shrew	<i>Blarina brevicauda</i>	X	X	X	X		X
Eastern Red Bat	<i>Lasiurus borealis</i>	X	X	X	X	X	X
Eastern Pipistrelle	<i>Pipistrellus subflavus</i>	X	X	X	X	X	X

*Species occurring along woodland streams, springs, and seeps, especially where woody debris provides ample shelter.

Appendix D

Forest Stand Tables for Boone Unit

Table 7. Forest Stand Table for Boone Unit

Stand No.	Plan No.	Zone	Acres	Forest Type	Stand Size	Age
001	5	4	12.7	Cedar/hardwood	Pole	40
002	11	4	13.8	Upland hardwood	Pole	20
003	4	3	3	Upland hardwood	Large Sawtimber	70
003	5	4	9	Upland hardwood	Large Sawtimber	70
014	5	4	18.7	Upland hardwood	Pole	50
015	5	4	4.8	Pine/cedar/hardwood	Pole	30
016	5	4	4.3	Upland hardwood	Pole	70
027	26	3	15	Mixed hardwood	Large Sawtimber	70
028	26	3	6.8	Cedar/hardwood	Pole	90
029	26	3	5.7	Upland hardwood	Various	50
030	26	3	10.2	Mixed hardwood	Large Sawtimber	80
031	28	3	8.7	Cedar/hardwood	Small Sawtimber	50
032	28	3	26.5	Upland hardwood	Pole	20
033	28	3	24	Mixed hardwood	Large Sawtimber	80
034	28	3	5.7	Upland hardwood	Various	Various
035	28	3	35	Cedar/hardwood	Various	80
036	28	3	9.2	Upland hardwood	Various	Various
037	28	3	5.7	Upland hardwood	Various	Various
038	28	3	15.3	Upland hardwood	Pole	20
039	28	3	11.7	Mixed hardwood	Large Sawtimber	80
040	28	3	9.5	Cedar/hardwood	Pole	90
041	29	3	9.4	Upland hardwood	Large Sawtimber	90
042	29	3	16.2	Upland hardwood	Small Sawtimber	70
043	29	3	10.4	Pine/hardwood	Large Sawtimber	Various
044	29	3	66	Pine/cedar/hardwood	Various	Various
045	29	3	3.5	Mixed hardwood	Large Sawtimber	90
046	32	4	50.2	Pine/cedar/hardwood	Sapling	30
047	32	4	10.8	Upland hardwood	Various	60
048	32	4	15.8	Cove hardwood	Large Sawtimber	80
049	39	3	12.1	Upland hardwood	Various	Various
050	39	3	13.2	Upland hardwood	Pole	20

Stand No.	Plan No.	Zone	Acres	Forest Type	Stand Size	Age
051	10	4	5.3	Upland hardwood	Pole	20
052	13	4	3.1	Upland hardwood	Small Sawtimber	Various
053	15	3	5.4	Upland hardwood	Small Sawtimber	90
054	18	4	2.1	Mixed hardwood	Pole	Various
055	19	3	2.2	Bottomland hardwood	Pole	Various
056	22	4	0.1	Open		-
057	24	3	0.7	Bottomland hardwood	Pole	Various
058	25	4	0.8	Open		-
059	31	3	7.2	Upland hardwood	Small Sawtimber	90
060	33	3	1.7	Wetland		-
061	36	3	0.3	Wetland		-
062	37	4	1.5	Bottomland hardwood	Pole	Various
063	40	4	0.1	Bottomland hardwood	Pole	Various
064	44	3	6.4	Bottomland hardwood	Pole	Various
065	45	3	4.3	Bottomland hardwood	Small Sawtimber	Various
066	5	4	64.9	Open		-
067	6	3	3.5	Open		-
068	26	3	21.7	Open		-
			594.2			

Appendix E
Comment Letters and Responses



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

**THE ATTACHED LETTER WAS SENT TO THE FOLLOWING LIST OF NAMES ON
February 26, 2002**

Dear:

**DRAFT RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT
(EA)—BOONE MANAGEMENT UNIT, BOONE RESERVOIR, SULLIVAN AND
WASHINGTON COUNTIES COUNTY, TENNESSEE**

Enclosed for your review and comment is a recent EA on proposed resource management activities on 566 acres of TVA land on Boone Reservoir. The EA concludes that implementation of any of the three alternatives would have insignificant environmental effects. The proposed management plan would guide resource management activities in this area for a period of 25 years.

Please provide any comments you may have by March 29, 2002. Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

Original signed by Jon M. Loney

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

Enclosure

HMD:BL

cc: S. E. Davis, WPB 1A-MOT
J. W. Shipp, Jr., MR 2T-C

Files, EP&P, CST 17B-C

Boone Unit Plan DEA interagency.doc

Dr. Lee A. Barclay
Field Supervisor
U.S. Fish and Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

Mr. Louis Buck, Deputy Commissioner
Tennessee Department of Agriculture
Ellington Agricultural Center
Post Office Box 40627
Nashville, Tennessee 37204

Mr. Wilton Burnette
Department of Economic and Community Development
320 Sixth Avenue, North, 7th Floor
Nashville, Tennessee 37243-0405

Mr. Herbert L. Harper
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Attention: Mr. Joe Garrison and Mr. Nick Fielder (send 2 copies)

Mr. Dan Sherry (2 copies)
Tennessee Wildlife Resources Agency
Post Office Box 40747
Nashville, Tennessee 37204-0747

Mr. Ray Brisson
Environmental Planning and Permits Division
Department of Transportation
James K. Polk Building, Suite 900
Nashville, Tennessee 37243-0334

Ms. Joyce Hoyle
Division of Recreation Resources
10th Floor, L&C Tower
401 Church Street
Nashville, Tennessee 37243

Mr. Justin P. Wilson, Deputy to the Governor for Policy
Department of Environment and Conservation
Environmental Policy Office
L & C Tower, 21st Floor
401 Church Street
Nashville, Tennessee 37243-1530

Attention: Mr. Dodd Galbreath (include copy of this distribution list)

Mr. Reggie Reeves
Division of Natural Heritage
8th Floor, L&C Tower
401 Church Street
Nashville, Tennessee 37243-1553

Mr. Paul Davis
Division of Water Pollution Control
7th Floor, L&C Tower
401 Church Street
Nashville, Tennessee 37243-1553

Lt. Col. Stephen W. Gay
District Engineer
U.S. Army Corps of Engineers
Nashville District
Post Office Box 1070
Nashville, Tennessee 37202-1070

Mr. Ron Gatlin, Chief, Regulatory Branch
Nashville District
U.S. Army Corps of Engineers
3701 Bell Road
Nashville, Tennessee 37214

U.S. Department of the Interior
Office of Environmental Policy and Compliance
1849 C Street NW, Room 2340
Washington, DC 20240

Ms. Susan Roberts-Reid
Executive Director
First Tennessee Development District
207 North Boone Street, Suite 800
Johnson City, Tennessee 37604-5699

Ms. Anne Zimmerman
Forest Supervisor
Cherokee National Forest
Post Office Box 2010
Cleveland, Tennessee 37320

PUBLIC NOTICE

Boone Resource Management Plan and Environmental Assessment

Proposed Action

The Tennessee Valley Authority (TVA) is seeking public comments on a draft resource management plan (Plan) and Environmental Assessment (EA) for 566 acres of public land known as the Boone Unit.

Location

This public land is located on Boone Reservoir in Sullivan and Washington Counties, Tennessee, approximately 10 miles southeast of Kingsport, 9 miles north of Johnson City, and 16 miles southwest of Bristol. The Boone Unit includes land along both banks of the South Fork Holston River (Mile 18.6 to Mile 35), Watauga River (mouth to Mile 15.2), and the left descending bank of Beaver Creek from the mouth to Mile 1.8.

Description

The draft Plan, which includes stakeholder input, would guide TVA's resource management activities for a period of 25 years, or until the Plan is amended or supplemented. The Plan seeks to: 1) provide sustainable public-use benefits through effective management of natural resources, 2) protect sensitive resources, and 3) contribute to improved water quality in this portion of the Beaver Creek, South Fork Holston River and Watauga River watersheds.

TVA is evaluating the environmental impacts and benefits of the proposed action. The draft EA identifies alternatives for managing forest and wildlife resources and public recreation opportunities, including hunting, fishing, hiking and wildlife observation. Potential environmental effects of each alternative were analyzed in the EA.

TVA is also seeking to identify potential issues that should be addressed during the review of this proposal, and in accordance with the National Environmental Policy Act and National Historic Preservation Act, is interested in receiving comments on the possible effects of the proposed action on environmental resources, including historic properties.

Comments

Your comments are encouraged and will be used in reaching a decision concerning the draft Plan and EA. Copies of these documents can be obtained by calling the telephone number listed below or by writing or e-mailing the address below. Please provide any written comments on the proposed action on or before March 29, 2002. Comments should be directed to:

Stanford E. Davis

Tennessee Valley Authority
2611 Andrew Johnson Highway
Morristown, Tennessee 37814-3295
(865) 632-3792 or 1-800-TVALAND
boone-eacommments@tva.gov



I am interested in a copy of JVA proposed management in the draft Boone Reservoir Resource Management Unit Plan and Environmental Assessment. The plan that sets forth resource management objectives and activities for 566 acres of public land allocated to Sensitive Resource Management and Natural Resource ~~Conservation~~ Conservation in the Boone Reservoir Land Management Plan adopted in 1999.

Thanks
W. H. Shipley Jr
924 Deerlick Rd
Piney Flat In 37686

Davis, Stanford E.

From: Davis, Stanford E.
Sent: Monday, April 01, 2002 9:46 AM
To: 'mabutler@conservetn.com'; 'lmodica@earthlink.net'; 'dsherry@mail.state.tn.us'
Cc: Draper, Harold M.; Hobbs, Tandy S.; Feeman, Joe C.; Jordan, J. Ralph; Robinson, Catherine M.
Subject: RE: TCL Website Updated

Mike, Linda, and Dan (DEA/Plan from Jon Loney): Hope things are well with each of you personally and professionally.

On or about February 26, you were both forwarded a Plan/Draft Environmental Assessment for the Boone Resource Management Unit on Boone Reservoir in upper east Tennessee. Comments were requested by March 29 and we have not heard from either of your organizations. TCL's, Sierra Club's, and, TWRA's perspectives are very important to us and we would like to heard from each of you as soon as possible. For your convenience, you can email comments to boone-eacommentstva.gov.

Thanks in advance!

Stan

Davis, Stanford E.

From: Bob Nichols [Bob.Nichols@state.tn.us]
Sent: Tuesday, April 02, 2002 4:09 PM
To: Dan Sherry
Cc: Bob Ripley
Subject: Boone Lake Plan

I put a copy of the plan out to staff at our March staff meeting and jusr sent them a reminder. If they do not have any comments to you by Friday morning (April 5), then Region 4 approves Alternative C as proposed.

Davis, Stanford E.

From: LCModica@aol.com
Sent: Friday, April 12, 2002 2:16 PM
To: Davis, Stanford E.; boone-eacommments; margaregregg@wireco.net
Subject: Re: Boone Reservoir Resource Management Draft Environmental Assessment and Unit Plan (DEA/Plan)

April 12, 2002

Stan Davis, TVA

Senior NEPA Specialist

NEPA Administration

Dear Mr. Davis:

Thank you for giving the State of Franklin Group-Sierra Club the opportunity to comment on the Boone Reservoir Resource Management Draft Environmental Assessment and Unit Plan (DEA/Plan). After reviewing the document, I recalled that the State of Franklin Group had provided substantial input to the TVA a couple of years ago on the issue of TVA land management. We are pleased with your product, and have only six comments to contribute at this time.

Section 2.4.1:

Permanent linear openings to provide public access should be kept as narrow as possible and daylighting should be minimal. Off-road vehicle use should be banned since their noise, and the erosion they cause, damage wildlife habitat.

Section 2.4.2.1:

While we agree with the conversion of fescue to native grasses and other native plants that provide food & cover for songbirds & other wildlife, the Sierra Club would prefer that TVA eliminate fescue with fire (if possible) rather than with chemicals (Roundup & Plateau).

We question the need for wildlife openings in forested units since the large agricultural units nearby should provide substantial feeding options for wildlife & adequate viewing opportunities for wildlife watchers.

If exotic plants can be reduced or eliminated by fire rather than Garlon or Roundup, the State of Franklin Group would prefer controlled burns to chemical applications.

Sec. 2.4.2.3:

Your section on scenery management is especially sensitive to native species appreciation, and contains good ideas on creating meandering trails & informative brochures.

Sec. 3.7:

While the Boone Units account for a small portion of the land in the Boone watershed, TVA should use it as a showcase for environmentally-sensitive development and educate developers and trail proponents on the newest and best approaches to road & trail construction. Permeable surfaces such as porous concrete & recycled-plastic planking should be used whenever paving and boardwalks are required. The Sierra Club would appreciate TVA demonstrations on the installation and use of such products should be advertised to developers and trail proponents in our region.

Thank you again for the opportunity to comment on your fine report.

Sincerely,

Linda C. Modica, Chair
State of Franklin Group-Sierra Club
266 Mayberry Road
Jonesborough, TN 37659

1

cc: Margaret Gregg, Secretary
State of Franklin Group-Sierra Club

May 21, 2002

Ms. Linda C. Modica, Chair
State of Franklin Group-Sierra Club
266 Mayberry Road
Jonesborough, Tennessee 37659

Dear Linda:

Thank you for your April 12 letter with comments on the Draft Resource Management Plan (Plan) and Environmental Assessment (EA) for Boone Management Unit. As always your input is thorough and insightful. Our meeting with the Sierra Club during development of the Plan was very helpful in understanding the resource management issues in the Boone area. As a result of our discussions, one of the main objectives of the 25-year Plan is development of early successional grassland habitat that will benefit a number of sensitive songbird species.

Although we discussed your comments by telephone on April 19, I am sending you this letter as an official response for the EA. Each of your points is addressed below:

Comment: “Section 2.4.1: Permanent linear openings to provide public access should be kept as narrow as possible and daylighting should be minimal. Off-road vehicle use should be banned since their noise, and the erosion they cause, damage wildlife habitat.”

Response: Daylighting will be kept to a minimum. We share your concern for the potential invasion of exotic species and will closely monitor openings and corridors. Customer access is expected to include wildlife viewing, hiking, horseback riding, bicycling, and hunting. Public vehicular access will not be allowed on these access corridors.

Comment: “Section 2.4.2.1: While we agree with the conversion of fescue to native grasses and other native plants that provide food & cover for songbirds & other wildlife, the Sierra Club would prefer that TVA eliminate fescue with fire (if possible) rather than with chemicals (Roundup & Plateau). We question the need for wildlife openings in forested units since the large agricultural units nearby should provide substantial feeding options for wildlife & adequate viewing opportunities for wildlife watchers. If exotic plants can be reduced or eliminated by fire rather than Garlon or Roundup, the State of Franklin Group would prefer controlled burns to chemical applications.”

Ms. Linda C. Modica
Page 2
May 21, 2002

Response: Burning alone does not control fescue, but can eliminate a fall treatment with herbicide if desired. However, we plan to mow in the fall instead of burn and then treat with herbicide in the spring. We have chosen Roundup and Plateau because of their short active duration (half life) and they are considered two of the safest herbicides. We only expect to use Roundup once (prior to conversion) and Plateau only if necessary to kill competition during establishment (first 1-3 years). We also plan to burn periodically to control competition and stimulate growth of the native grasses. The tract (Stand 66) that is being considered for conversion is not adjacent to the reservoir, and we do not expect movement of these herbicides through the soil.

The Plan calls for forest openings to be created in only two areas that were formerly pine stands. Southern pine beetles have killed the trees in these areas and the stands are currently comprised of scattered sapling and pole hardwoods that developed under the previous stands. Our plan is to clear the dead pines and hardwoods and plant native grasses (big bluestem, little bluestem, and Indian grass). Although there is substantial agricultural lands near Boone Reservoir, most of the fields are occupied by fescue, which has little value for wildlife. Native grasses will add a currently scarce, grassland habitat type that is important to a variety of wildlife, including the bird species horned lark, grasshopper sparrow, and bobwhite quail. This will also create an excellent area for wildlife viewing.

Exotic species control is becoming more important each year. Although currently there is not a big problem with exotics on Boone, the potential is there. Again, control burning is not very effective in eradicating many exotic species, and often increases their growth. Therefore, we have found herbicides to be the most effective control. The herbicide that is most often used, Garlon, is another new generation of herbicide that is generally considered benign in its effect on the environment.

Comment: “Sec. 2.4.2.3: Your section on scenery management is especially sensitive to native species appreciation, and contains good ideas on creating meandering trails & informative brochures.”

Response: Thanks for your comment.

Comment: “Sec. 3.7: While the Boone Units account for a small portion of the land in the Boone watershed, TVA should use it as a showcase for environmentally-sensitive development and educate developers and trail proponents on the newest and best approaches to road & trail construction. Permeable surfaces such as porous concrete & recycled-plastic planking should be used whenever paving and boardwalks are required. The Sierra Club would appreciate TVA demonstrations on the installation and use of such products should be advertised to developers and trail proponents in our region.”

Response: TVA would welcome the opportunity to work with developers or other groups in establishment of trails. However, the trails proposed for the Boone Unit are simple foot trails that will provide wildlife viewing and walking opportunities. These trails are envisioned to be low maintenance trails with a grass surface. As for road building, the roads will be built to Best Management Practices standards and are intended for nonvehicular traffic, except TVA access to manage the area. We do not anticipate building any boardwalks or other structures except benches.

Ms. Linda C. Modica
Page 3
May 21, 2002

Per our telephone conversation, we look forward to working with the Sierra Club in design, layout, and maintenance of trails on the Boone Unit. We welcome the opportunity to partner with your group. If you have any questions or further comments, please call me at 865-632-1667.

Sincerely,

Joe C. Feeman, Jr., Forester
Upper Holston Watershed Team
Resource Stewardship

cc: Ms. Margaret Gregg, Secretary
State of Franklin Group-Sierra Club
266 Mayberry Road
Jonesborough, Tennessee 37659



United States
Department of
Agriculture

Forest
Service

Cherokee National Forest

P. O. Box 2010
Cleveland, TN 37320
423-476-9700

File Code: 1950

Date: March 25, 2002

Stanford E. Davis
Tennessee Valley Authority
2611 W. Andrew Johnson Hwy.
Morristown, TN 37814

Dear Mr. Davis:

Thank you for the opportunity to review and comment on the "Draft Resource Management Plan and Environmental Assessment (EA)—Boone Management Unit, Boone Reservoir, Sullivan and Washington Counties, Tennessee." The Cherokee National Forest (CNF) does not have any Forest Service land in the project area for which the EA addresses; therefore, the CNF has no comment on the resource management plan and EA.

Sincerely,

STEPHEN R. RICKERSON
Acting Forest Supervisor





United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

March 12, 2002

Mr. Jon M. Loney
NEPA Administration
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Re: Boone Reservoir Draft Resource Management Plan and Environmental Assessment
FWS# 2002-1186

Dear Mr. Loney:

Thank you for your letter and enclosure dated February 26, 2002, regarding the Resource Management Plan and Environmental Assessment for Boone Reservoir, located in Sullivan and Washington Counties, Tennessee. Fish and Wildlife Service biologists have reviewed the information submitted and we offer the following comments.

The Resource Management Plan is anticipated to guide activities on the Boone Reservoir lands for the next 25 years. While we can concur with the Environmental Assessment in general terms, we cannot concur that the proposed activities will not adversely impact currently listed or future listed species for the next 25 years. We recommend that you submit annual work plans on any proposed habitat management activities such as prescribed burns or wildlife openings to us for informal consultation under Section 7 of the Endangered Species Act. We also recommend that surveys be conducted for the Indiana bat (*Myotis sodalis*) to determine the presence or absence of this federally endangered species.

Thank you for the opportunity to review this information. If you have any questions, please do not hesitate to contact Sherry Williams of my staff at (931)528-6481, ext. 203.

Sincerely,

Lee A. Barclay, Ph.D.
Field Supervisor

Doc Type: Admin Record
Index Field: Consultation/Interagency Review
Project Name: Boone Reservoir Resource Management Plan
Project No: 2002-48

June 5, 2002

Dr. Lee A. Barclay
U. S. Fish and Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

**BOONE RESERVOIR DRAFT RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL
ASSESSMENT FWS# 2002-1186**

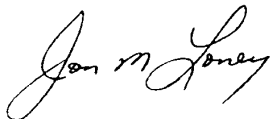
Dear Dr. Barclay:

In late February, 2002, we sent you the subject draft resource management plan and environmental assessment (EA) for your review. You responded to us by letter on March 12, 2002. In your response, you stated that you could not concur that the proposed activities will not adversely impact currently listed or future listed species for the next 25 years. You also recommended that we submit annual work plans for habitat management activities to you for informal consultation under Section 7 of the Endangered Species Act, and that we conduct surveys to determine the presence or absence of the Indiana bat on the Boone lands.

Enclosed for your review is a revised draft of the plan and EA. This version contains additional information about listed species potentially occurring on the Boone lands, such as the bald eagle, gray bat, and Indiana bat, as well as measures to avoid impacting these species. These measures will be in place for the life of the plan, and we believe there will be no impacts to the gray bat or the Indiana bat, and no adverse impacts to the bald eagle. Under the preferred alternative, the most intensive habitat management activities would occur in the next few years. Subsequent habitat management activities consist of routine maintenance of existing trails and wildlife openings, as well as administration of agricultural licenses. Because these activities would not impact currently listed species, we do not believe informal consultations on annual workplans is necessary. As species are listed under the Endangered Species Act in the future, we will evaluate the potential for them to be affected by the activities proposed in this plan. If our evaluation indicates these species may be affected, we will consult with you.

We request your concurrence with our determination that the proposed activities will not adversely impact species listed under the Endangered Species Act. Please note that the enclosed draft EA does not contain the Figure 4 maps or the Appendix F Best Management Practices for Agricultural Licenses Provisions that were a part of the previous draft you reviewed. These sections are unchanged from the previous draft. If you have questions, please contact Chuck Nicholson at (865) 632-3582 or cpnicholson@tva.gov.

Sincerely,



Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

CPN:MSW

Enclosure

cc: S. E. Davis, WT 8C-K
J. C. Feeman, ABL 1A-N
EDMS, SP 1D-C

Boone Unit Plan FWS Consult2.doc



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

June 14, 2002

Mr. Jon M. Loney
NEPA Administration
Environmental Policy and Planning
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Re: Boone Reservoir Draft Resource Management Plan and Environmental Assessment (FWS #2002-1186a)

Dear Mr. Loney:

Fish and Wildlife Service personnel have reviewed the revised draft of the subject document, transmitted via your letter dated June 5, 2002. We appreciate the expanded explanations relative to potential habitat manipulations and their likelihood of adversely affecting federally listed species, migratory birds, and other biota residing on or near TVA's Boone Reservoir lands in Sullivan and Washington counties, Tennessee.

In your transmittal letter, you request Service concurrence with your determination that the proposed activities "...will not adversely impact species listed under the Endangered Species Act." This letter serves to convey our finding that the proposed activities are not likely to adversely affect Federally listed species. In view of this, we conclude that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled relative to this project. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Thank you for the opportunity to comment on this revised document. If you have questions about our comments, or if we can be of further assistance, please call me at 931/528-6481, ext. 212.

Sincerely,

Lee A. Barclay, Ph.D.
Field Supervisor



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

March 11, 2002

Mr. Jon Loney
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: TVA, BOONE RES RESOURCE MANAGEMENT PLAN, UNINCORPORATED,
SULLIVAN COUNTY

Dear Mr. Loney:

Pursuant to your request, this office has reviewed documentation concerning the above-referenced undertaking. This is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering available information, we concur that phased compliance is an appropriate strategy for your agency to meet its Section 106 compliance obligation. Upon selection of the alternative to be implemented, please submit the project documentation this office for our further review and comment.

Until you have received a final comment on this project from the Council, you have not completed the Section 106 review process. Please direct questions and comments to Jennifer M. Bartlett (615) 741-1588, ext. 17. We appreciate your cooperation.

Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jmb

cc: J. Bennett Graham, TVA Cultural Resources

Appendix F.

**Best Management Practices for Agricultural Licenses
(Special Provisions)**

TVA AGRICULTURAL LAND USE LICENSE

INSTRUCTIONS

NOTE: There are two “page 3 of 3” pages to this form. One is for “**ROW CROPS**” and one is for “**SOD CROPS.**” One of these two pages will be used along with the other pages to this form as required.

TENNESSEE VALLEY AUTHORITY AGRICULTURAL LAND USE LICENSE

Serial No. _____

Licensee _____ Street or RFD _____ Tract Nos. _____

City _____ State _____ ZIP Code _____ Map No. _____

Telephone No. _____ Reservoir _____
County _____

is hereby licensed to occupy and use the land delineated on the attached map for the purposes specified and subject to the conditions set forth below, on pages 2 and 3 hereof, and/or attached hereto, during the period:

From _____, _____ to _____, _____

1. **LAND USE PLAN.** The _____ acres(s) licensed herein may be used by Licensee solely for agricultural purposes specified below and only at the locations shown on the attached map.

Crop by Year

Tract	Field	Acreage	_____	_____	_____	_____	_____

2. **SPECIAL PROVISIONS:** See page 3.

3. **PAYMENT.** The rental for the first calendar year or portion thereof in which this license is in effect shall be \$ _____. The rental for each succeeding calendar year shall be \$ _____. Rental payments shall be made annually and in advance. The first rental payment shall be due on or before the effective date of this license. The rental payment for each succeeding calendar year shall be due on or before the first day of January. Licensee shall pay TVA interest, at the rate payable by TVA under the Prompt Payment Act (31 U.S.C. 3901-3906), on any overdue amount. Interest shall run from the date payment is due under this license until the date TVA receives payment or the date remittance is postmarked, whichever is earlier. In addition to the interest charge for late payment, Licensee shall pay TVA an administrative fee, currently fixed at Fifteen Dollars (\$15), as a result of such late payment. Payment of interest and the administrative fee shall be due thirty (30) days after the date of TVA's invoice for said payment. Failure to make any payment as required by this license shall be basis for termination.

(Additional Conditions on Page 2)

Executed this _____ day of _____, _____.

TENNESSEE VALLEY AUTHORITY

_____ By _____
LICENSEE

4. **ASSIGNMENT.** This license or any interest herein shall not be assigned, transferred, or granted by Licensee without the prior written approval of TVA.
5. **TERMINATION.** TVA reserves the unqualified and unrestricted right to cancel this license to all or any part of the licensed premises at any time, without regard to payment periods, by giving written notice to Licensee. In the event of any such cancellation, TVA shall determine whether Licensee has sustained a loss as a result of such cancellation and, if TVA determines that a loss has been suffered, TVA shall determine the amount, if any, which will constitute reasonable compensation to Licensee for such loss; and Licensee agrees to accept the sum so determined as full and final compensation for such loss and shall make no other claims whatsoever for compensation except for the right to a prorated refund for unearned rent upon cancellation of this license by TVA as provided herein (*except for termination for noncompliance*). The findings of TVA, both as to the existence of loss and what constitutes reasonable compensation therefore, shall be final and conclusive upon the parties hereto. TVA further reserves the right to terminate this agreement at any time for noncompliance with the provisions hereof. In such event, no refund or rent or compensation for loss shall be made, and Licensee shall have no interest in any growing crops on the premises. It is agreed that Licensee shall have the right to cancel this agreement effective as of December 31 of any calendar year by giving TVA advance written notice that effect not later than the last day _____ in the same calendar year. Upon any other termination of this agreement by Licensee, TVA shall have the right to retain any or all advance payments made by Licensee.
6. **FENCING.** Only customary farm-type fencing required to contain livestock within a pasture will be permitted on the licensed premises. The location for such fencing and the type material and construction must be approved by TVA prior to installation.
7. **REMOVAL OF SOD.** Sod shall not be sold or removed from any portion of the premises unless specifically permitted by the terms of Condition 2, Special Provisions.
8. **POLLUTION.** The Licensee will control all emissions of pollutants that might be discharged directly into the atmosphere, into any stream, lake, reservoir, or other surface of subterranean waters, or into or onto the ground from any part of the licensed premises, in full compliance with all applicable standards and requirements relating to pollution control of any kind now in effect or hereafter established pursuant to federal, state, or local statutes, ordinances, or regulations.
9. **PROTECTION.** Licensee shall not make or permit or suffer any member of his/her family, employees, agents, guests, or invitees to make any offensive use of the licensed premises, and shall not permit or suffer the commission of waste upon the premises by said parties. Licensee shall refrain from acts, which in the opinion of TVA, have a tendency to cause undue soil erosion thereon. Licensee shall make all reasonable efforts to prevent and suppress forest fires and grass fires upon or in the vicinity of the premises, and shall refrain from the cutting or removal of any timber on the premises without proper authorization by TVA.
10. **PUBLIC ACCESS.** Unless specifically permitted by the terms of Condition 2, Special Provisions, Licensee shall not post against or otherwise take action to restrict public entry upon the licensed premises but shall permit reasonable public access over and use of the licensed premises for recreational purposes, including but not limited to hunting and fishing; provided, however, that Licensee, in accepting this condition, does not thereby waive any remedies he may have against any member of the public under state law to recover for damages to crops or property on land covered by this license.
11. **LIABILITY.** Licensee shall hold the United States and TVA harmless from any and all liability for personal injuries, property damage, or for loss of life or property suffered or sustained by Licensee, by any member of Licensee's family, or by any other person arising out of or in any way connected with the use of condition of the licensed premises or any means of ingress thereto or egress therefrom, including without limitation any and all liability for such injuries, damage, or loss arising out of or in any way connected with flooding, siltation, soakage, erosion, or any consequences of said conditions whether or not the result of water control projects or operations undertaken or performed by TVA.
12. **CONGRESSIONAL INTEREST.** No member or delegate to Congress or Resident Commissioner or any officer, employee, special Government employee, or agent of TVA or Licensee shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom, but this provision shall not be construed to extend to a corporation or unit of Government contracting for its or for the public's general benefit; nor shall Licensee offer or give, directly or indirectly, to any officer, employee, special Government employee, or agent of TVA any gift gratuity, favor, entertainment, loan, or any other thing of monetary value, except as provided in 18 C.F.R. 1300.735-12 or -34. Breach of this provision shall constitute a material breach of this agreement.

SPECIAL PROVISIONS

Agricultural Best Management Practices (BMP's) - Licensee will manage these properties in compliance with the following Best Management Practices:

Sod Crop

- ☐ Tracts to be hayed or pastured (*where specifically authorized*) will not be mowed (*or grazed*) lower than three inches in height. Tracts not having sufficient grass and/or legume cover will be established in the grasses and/or legumes based on TVA's recommendations. Fescues are not to be used in establishing sod.
- ☐ Clipping of pasture will be accomplished at least annually to control undesirable growth and will be completed prior to March 15 or after August 15.
- ☐ Where grazing is permitted, and in accordance with the conditions prescribed in No. 6 of this license, livestock will be confined to the licensed area only and excluded from all watercourses and forested areas. For tracts abutting reservoirs, a fence will be erected along the shoreline, 50 feet back from the edge of summer pool, and if permissible, a water lane will be constructed at the Licensee's expense at the point(s) designated on the attached map. The fence shall be erected at the Licensee's expense and remain Licensee's property. If electric fencing is used, it will be maintained in good working order. Additionally, any TVA-owned fencing will be maintained by the Licensee.
- ☐ A 30-foot buffer strip will be maintained around designated areas to be hayed. This buffer will be mowed or bushhogged every other year, either prior to March 15 or after August 15.
- ☐ Nutrient and pesticide applications will be in accordance with TVA-approved application standards. Beginning with each license period, soil testing will be accomplished in accordance with recognized procedures and lime applied in accordance with recommended rates.

Liming - A credit may be allocated against the next year's rental payment, not to exceed the annual rental rate, for the cost of lime applied to the licensed area, provided that the Licensee complies with the following: **NOTE** - IF PRODUCTIVITY OF THIS LAND DECLINES BECAUSE OF NUTRIENT DRAIN, TVA WILL CONSIDER THIS AS SUFFICIENT GROUNDS FOR CANCELING THIS LICENSE.

- ☐ Notifies TVA's appropriate Resource Stewardship Watershed Team to obtain prior approval for liming credit.
- ☐ Takes soil sample(s) identified by tract number(s) and the number of acres to which the lime will be applied and has the sample(s) analyzed by the appropriate soil testing laboratory for the state where the land is located. Procedures for collecting and mailing samples may be obtained from the Agricultural Extension or Natural Resource Conservation Service offices in your county.
- ☐ Submits soil test results to TVA's appropriate Resource Stewardship Watershed Team for review and notifies same at least two days prior to application of the lime.
- ☐ After liming, submits to TVA's appropriate Resource Stewardship Watershed Team receipt(s) and weight ticket(s) which clearly indicate cost of the lime, amounts used, and the areas to which the lime was applied.

Other

TVA reserves the unrestricted right for itself, and persons authorized by it, to enter upon the premises at any time for the purpose of archaeological, historical, and cultural explorations without liability to Licensee.

SPECIAL PROVISIONS

Agricultural Best Management Practices (BMP's) - Licensee will manage these properties in compliance with the following Best Management Practices:

Row Crop

- ☐ A 30-foot buffer strip of perennial vegetation will be established and/or maintained around the outside perimeter of cropped fields, except along those margins adjacent to reservoirs shoreline where a 50-foot buffer strip will be established and/or maintained. Natural drainageway(s) will also be established and/or maintained in perennial vegetation.
- ☐ Conventional tillage practices will only be allowed on those crop fields where soils are determined not to be highly erodible. For fields where soils have been determined to be potentially highly erodible, conservation tillage methods will be required as specified by TVA.
- ☐ For conventional tillage, crop residents will be maintained on soil surface until 45 days prior to plowing. Crop residues will be maintained at the 30 percent level on field where conservation tillage is employed. Where prior approval has been granted for not maintaining crop residues, green winter cover crops will be established within 30 days following harvest.
- ☐ Nutrient and pesticide applications will be in accordance with TVA-approved application standards. Beginning with each license period, soil testing will be accomplished in accordance with recognized procedures and lime applied in accordance with recommended rates.

Liming - A credit may be allocated against the next year's rental payment, not to exceed the annual rental rate, for the cost of lime applied to the licensed area, provided that the Licensee complies with the following: **NOTE** - IF PRODUCTIVITY OF THIS LAND DECLINES BECAUSE OF NUTRIENT DRAIN, TVA WILL CONSIDER THIS AS SUFFICIENT GROUNDS FOR CANCELING THIS LICENSE.

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- ☐ After liming, submits to TVA's appropriate Resource Stewardship Watershed Team receipt(s) and weight ticket(s) which clearly indicate cost of the lime, amounts used, and the areas to which the lime was applied.

Other

TVA reserves the unrestricted right for itself, and persons authorized by it, to enter upon the premises at any time for the purpose of archaeological, historical, and cultural explorations without liability to Licensee.

Appendix G.
Finding of No Significant Impacts

FINDING OF NO SIGNIFICANT IMPACT (FONSI)**BOONE RESOURCE MANAGEMENT UNIT PLAN
BOONE RESERVOIR
SULLIVAN AND WASHINGTON, TENNESSEE****Background**

TVA develops resource management plans to assist in forest, wildlife, and recreation management on the public lands around its reservoirs. On the 594-acre Boone Management Unit on Boone Reservoir, TVA proposes to conduct activities to manage public use, forest resources, and wildlife resources. This unit consists of TVA land located along both banks of the South Fork Holston River (mile 18.6 to mile 35), Watauga River (mouth to mile 15.2) and the left descending bank of Beaver Creek (mouth to mile 1.8).

The following activities are proposed:

- Create a permanent linear opening (road) about 16 feet wide in Stand 33 (1500 feet) and through Stands 35 and 39 to connect with Stand 38 (2500 feet).
- Facilitate public-use where no public road access currently exists by identifying informal access sites at appropriate shoreline locations in Stands 32, 38, 44 (2 locations), and 46.
- Develop a trail through Stands 1, 3, and 66 to connect with a proposed trail on the dam reservation for wildlife viewing, hiking, and other non-vehicular activities.
- Periodically repaint and/or place signs along Unit boundary so the people would know what lands are available for their use.
- Develop a Unit brochure and map to identify TVA public land and to facilitate public-use of the Boone Management Unit.
- Continue the current partnership with the Boone Lake Users Association to control litter at informal camp sites and assist with increasing area of coverage by providing garbage cans and bags. Build volunteer support and assistance in community and lake cleanups. TVA would serve as the coordinator of cleanups and provide bags, gloves, and other supplies to facilitate such cleanups.
- Install pit toilets or other facilities to control human wastes at informal camp sites.
- Develop wildlife openings by clearing dead pine and scattered pole-sized hardwoods in the central portion of Stand 32 (approximately 8 acres in the dead pine area) and the northeast portion of Stand 38 (approximately 8 acres). Manage and periodically renovate wildlife openings, including mowing and conducting controlled burns, would be implemented.
- Convert agricultural license on Stand 66, which is predominately in fescue cover, and currently rented for hay, to native warm-season grasses (NWSG) and other wildlife foods.
- Install wildlife nest boxes along riparian zones and adjacent to wildlife openings.
- Continue to license Stand 68 for agricultural use (hay only) and incorporated in wildlife habitat management program and converted to NWSG.
- Consistent with guidelines set forth in Executive Order 13112 (Invasive Species) of 1999, treat invasive exotic species where needed to control competition with planted wildlife foods.
- Maintain and enhance visual resources to add beauty and variety to the visible landscape enrich the aesthetic sense of place, and increase public enjoyment of the reservoir lands.
- Prevent or minimize soil erosion, all soil-disturbing activities (e.g., road construction) would include use of appropriate BMPs.
- Compliance with the National Historic Preservation Act, prior to initiation of any soil-disturbing undertakings TVA would use the phased identification and evaluation approach

contained within Section 106 regulations to determine if properties eligible for listing in the National Register of Historic Places would be affected.

- Controlled burns would be conducted at appropriate times of the year, and under meteorological conditions suitable for reducing the amount of smoke generated.

TVA sought input on management of the Boone Management Unit from outdoor recreation and wildlife management interests in the area. In addition, on February 26, 2002, a draft Unit Plan and EA was made available to the public and 15 environmental agencies. Comments were received from the State of Franklin Group-Sierra Club, United States Department of Agriculture, Forest Service (no comment); Tennessee Wildlife Resources Agency (TWRA), Tennessee Historical Commission (THC), and U.S. Fish and Wildlife Service (FWS). State of Franklin Group-Sierra Club expressed a number of concerns about off-road vehicles, herbicide use, effects on biodiversity, and its desires for TVA to demonstrate environmentally sensitive recreational development. TWRA expressed a preference for Alternative C. FWS earlier expressed concern about the potential need for TVA to submit annual work plans and potential affects on federally endangered Indiana bat. In response to FWS concerns, TVA revised the DEA and resubmitted it for further review. In its letter of June 14, 2002, FWS expressed appreciation for TVA's expanded explanations relative to potential habitat manipulations and their likelihood of adversely affecting federally listed species, migratory birds, and other biota in the vicinity of Boone Reservoir. FWS also conveyed its finding that the proposed activities are not likely to adversely affect federally listed species. THC indicated agreement with the proposed phased identification and evaluation approach for the management of historic properties.

After considering and responding to all comments in the EA, TVA developed a Final Resource Management Plan and Environmental Assessment. This FONSI completes TVA's environmental review.

Alternatives

The EA evaluates the potential environmental impacts of three alternatives for management of the Boone Management Unit. These are Current Management (No Action Alternative, or Alternative A), No Resource Management (Alternative B), and Proposed Resource Management Program (Alternative C). The EA is attached and incorporated by reference. Under Alternative A there would be virtually no change to TVA's current management of land and resources within the Boone Management Unit. Under this alternative, TVA would continue its current program of limited management. This would include periodic boundary maintenance and occasional trash collection. Over the 25-year implementation cycle, Alternative A would likely maintain existing levels of biological diversity at both the community and species levels and maintain the hydrologic unit's poor rating. Stakeholder needs that would not be met under this alternative would include improved wildlife habitat for viewing and hunting, improved hiking and bank fishing opportunities, and litter cleanup. Adoption of Alternative B would likely result in some locally detrimental effects to lands and natural resources. Under this alternative, TVA would no longer maintain boundaries, or address stakeholder-identified needs and concerns related to public safety or the condition of the land and associated resources. Lands currently under agricultural license would be withdrawn from the program and allowed to revert to forest cover. Conflicts between various user groups, and between users and adjacent property owners would likely increase. Abuse and misuse of Boone Management Unit lands would likely increase, and stakeholder needs and concerns such as increased management to improve wildlife habitat, development of hiking trails, and cleaning up trash would not be met or addressed. Adoption of Alternative C would result in improvements in the quality of available

wildlife habitats and provide for improved public access and recreational use opportunities. The increased stewardship activities on TVA lands along with implementation of BMPs would likely contribute to improving the hydrologic unit's current "poor" rating.

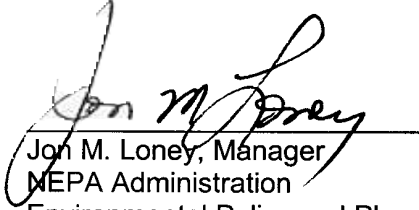
Impacts Assessment

Under any of the three Alternatives, the EA finds that impacts to ecological communities, sensitive natural resources, cultural resources, water quality, air quality, and visual resources would be insignificant. Under Alternative A, no forest management activities are planned in hardwood stands; thus, other than accounting for growth and natural decay, no long- or short-term effects on this community type or any wildlife species using it are expected. TVA would continue licensing existing agricultural tracts resulting in insignificant effects on wildlife. Under Alternatives A and B the pine community type would remain unchanged; there are no plans to plant pine trees. Selection of Alternative B would result in reversion of land under agricultural license. Over the long term, the majority of this acreage would revert to the mixed hardwood-conifer forest community types. However, long-term benefits would be minimal. This could increase hardwood acreage if fields reverted to this type; however, the more likely scenario is reversion (at least initially) to the mixed forest types. This would have an insignificant effect on wildlife using hardwood communities. Under Alternatives A or B, there would likely be an increase in existing populations of exotic species on open areas in the Unit.

Under Alternative C, the proposed management program, TVA would increase the pine community type by 4 acres through planting of white pine. Under this alternative, NWSG conversion and more intensive open land management would occur. This would increase the habitat value of this tract by replacing fescue sod with species providing greater food and cover value for wildlife. Also, sixteen acres of scattered sapling- and pole-size hardwood (dead pine stand) would be cleared to create permanent wildlife openings that would provide grassland for species preferring this habitat type, in a predominantly forested area. Adoption of Alternative C would not result in significant effects on forest wildlife and would be beneficial for species that use open lands. Adoption of Alternative C would decrease exotic species populations through treatment and eradication initiatives and facilitate better establishment and growth of preferred wildlife food species. Also, conversion to native grasses compliments TVA's efforts to meet guidelines set forth in Executive Order 13112. Selection of Alternative C is expected to result in insignificant, short-term adverse impacts on aquatic resources because minimal activities are proposed near the shoreline and BMPs would be implemented to control erosion from activities on back-lying lands. To the extent that shoreline vegetation is protected or enhanced, and erosion is reduced on back-lying lands, beneficial long-term results would be expected. Activities proposed under Alternative C would increase grassland habitat and be potentially beneficial for species requiring this ecological community type, such as grasshopper sparrows and barn owls. Road and trail improvements would benefit wildlife viewers, hikers, bank fishermen, hunters, campers, and others seeking recreational opportunities. Shoreline access sites would be developed to facilitate access from the water. Scenic qualities of some areas on TVA land would be enhanced. Because of these benefits, TVA's preferred alternative is Alternative C.

Conclusion and Finding

After review of the EA, we agree that the proposed resource management plan for the Boone Management Unit would not have a significant impact on the quality of the environment. Accordingly, an environmental impact statement is not required. This FONSI is contingent upon successful implementation of the commitments listed in Section 3.14 of the attached EA.



Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning
Tennessee Valley Authority

August 9, 2002
Date